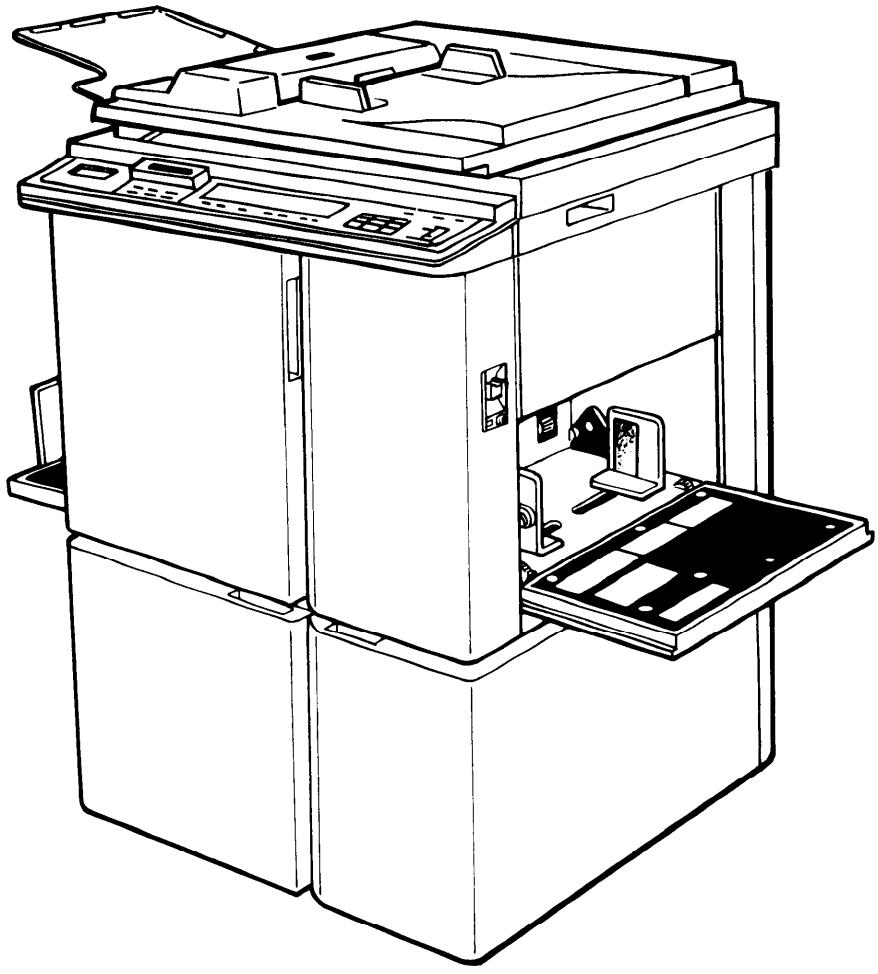
RICOH®

PRIPORT VT3600

Operating Instructions



For good print quality, Ricoh recommends that you use genuine Ricoh master and ink.

Ricoh shall not be responsible for any damage or expense that may result from the use of parts other than genuine Ricoh parts in your Ricoh office product.

Power Source: 120V , 60Hz , more than 4.1A
Please make sure to connect the power cord to a power source as above. For details about power connection, see page **6.**
Power Comsuption: Master Making : 374W Printing : 372W

Note: Some of the illustrations may be slightly different from your machine.

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INTRODUCTIO

This manual contains detailed instructions on the operation and care of t machine. To get the maximum versatility from this machine, all operators sho read and follow the instructions in this manual. Please keep this manual ir handy place near the machine.

SAFETY INFORMATIO

When using your machine, the following safety precautions should always followed.

Safety During Operation

In this manual, all safety messages are identified by the words "WARNING" a "Caution". These words mean the following:

WARNING:
Important information to alert you to a situation that might cause seric injury and damage to your property if instructions are not followed.

Caution:
Important information on how to prevent damage to your equipment, or how avoid a situation that might cause minor injury.

– WARNING –

- ***Do not modify or replace any parts other than the ones specified in t manual.***
- ***Since some parts of the machine are supplied with high voltage, tou only the parts specified in this manual.***
- ***Do not operate the machine without covers. You might get your fing caught in the machine, or the machine might be damaged because something, such as dust, getting inside it.***
- ***Since some parts of the machine are sharp and might cause inju touch only the parts specified in this manual.***

– Caution –

- While copying, do not turn off the main switch.
- While copying, do not open the door.

- ❒ While copying, do not unplug the power cord.
- ❒ While copying, do not move the machine.
- ❒ Keep corrosive liquids, such as acid, off the machine.
- ❒ Do not allow paper clips, staples, or other small objects to fall inside the machine.
- ❒ Open and close the door and covers softly.
- ❒ Do not put anything except originals or command sheets on the machine.
- ❒ Do not spill liquid on the machine.
- ❒ When you open or close the door or cover, don't let go of them.
- ❒ When you open or close the platen cover or optional document feeder, be careful not to pinch your fingers between the platen cover or document feeder and the back cover.
- ❒ If you clean rubber parts with benzine, wipe them with a dry cloth afterwards.

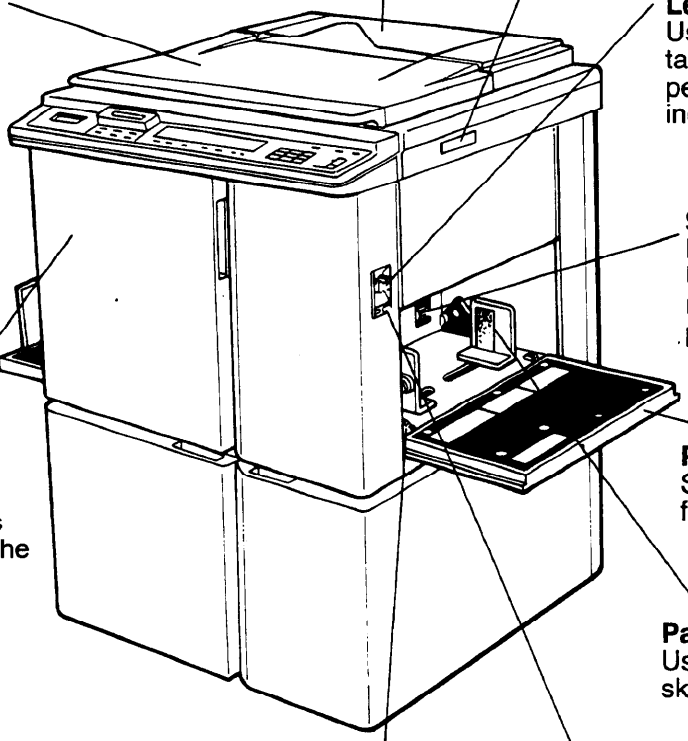
General Safety Information

- ❒ Always turn the machine off when you have finished printing for the day.
- ❒ When the machine will not be used for long periods, disconnect the power cord.
- ❒ If the machine must be transported by vehicle, please contact your service representative.

Chapter 1

GUIDE TO COMPONENTS

Machine Exterior



Original Holder
Convenient place for holding originals while operating the machine.

Original Table Release Lever
Use to open the original table unit when installing the master.

Platen Cover
Lower this cover over an original before printing.

Feed Roller Pressure Lever
Use to adjust the contact pressure of the paper feed roller according to paper thickness.

Separation Roller Pressure Levers
Use to adjust the separation roller pressure to prevent double feed.

Front Door
Open for access to the inside of the machine.

Paper Feed Table
Set paper on this table for printing.

Paper Feed Side Plates
Use to prevent paper skew.

Paper Feed Table Down key
Press to lower the paper feed table.

Side Plate Fine Adjusting Dial
Use to shift the paper feed table sideways.

Operation Panel

Screen key
Press to select the desired screen image according to the type and quality of the original. See page 30.

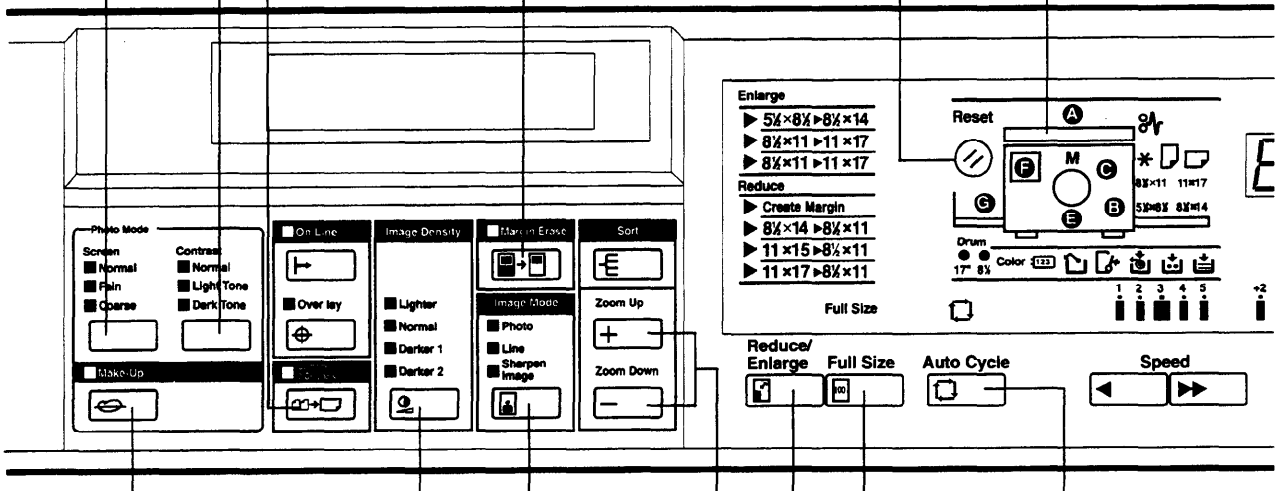
Contrast key
Press to select the desired contrast according to the type and quality of the original. See page 30.

Combine 2 Originals key
Press to combine two originals onto one print image. See page 40 and 52.

Margin Erase key
Press to print book originals that have a solid image on the edges. See page 27.

Reset key
Press to reset error indicators.

Monitors
The monitors light up or blink when a non-standard condition occurs within the machine. See page 92.



Make Up key
Press to use the optional Make-up function. See chapter 2.

Image Mode key
Press to select Line mode, Photo mode, or Sharpen Image mode according to the type and quality of the original. See page 30 and 31.

Reduce/Enlarge key
Press to reduce or enlarge the image. See page 21.

Auto Cycle key
Use to automatically process the master and make prints. See page 32.

Image Density key
Press to make prints darker or lighter. See page 18.

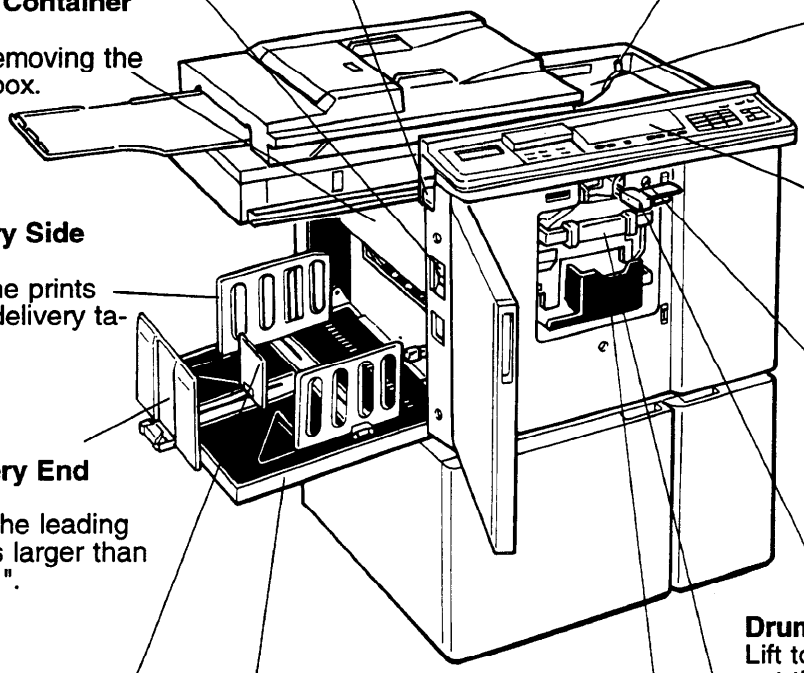
Zoom keys
Press to alter the reproduction ratio in 1% increments from 50% to 200%. See page 24.

Full Size key
Press to make prints the same size as the original.

When one of the following messages is displayed on the guidance display

Guidance Display	
CHECK THE PAPER SIZE PRESS MASTER KEY	You can resume your operation, but the entire image might not appear completely (paper size too small). Change the paper size to match the print area.
RE-ENTER COPY NUMBER MAXIMUM IS XXXX	The maximum number of prints that can be entered is specified by the Service Program mode. Change the number of prints.
RE-ENTER COPY NUMBER MINIMUM IS XXXX	The minimum number of prints that can be entered is specified by the Service Program mode. Change the number of prints.
200% MAXIMUM ENLARGEMENT	The maximum enlargement ratio that can be entered is 200%. If the entered reproduction ratio is over 200%, 200% will be selected.
50% MINIMUM REDUCTION	The minimum reduction ratio that can be entered is 50%. If the entered reduction ratio is under 50%, 50% will be selected.
SET COMMAND SHEETS	Make prints after you confirm whether there is an original or a command sheet on the exposure glass.
SET THE ORIGINALS	
ORIGINAL IN ADF CLOSE PLATEN COVER	Lower the platen cover completely or remove originals used previously from the document feeder before making the master.
INPUT YOUR ID CODE	User Code mode is set. Before printing, enter your user code.

Machine Interior



Master Eject Unit Open Button
Press to remove misfed paper or a misfed master.

Master Cut Button
Press this button to cut the master paper leading edge after installing a new master roll.

Main Switch
Use to turn the power on or off.

Pressure Release Lever
Use to install the master roll.

Master Eject Container Cover
Open when removing the master eject box.

Paper Delivery Side Plates
Use to align the prints on the paper delivery table.

Operation Panel
Operator controls and indicators are located here.

Drum Rotation Button
Press to replace the drum unit.

Paper Delivery End Plate
Use to align the leading edge of prints larger than A4, 8 1/2" x 11".

Drum Unit Lock Lever
Lift to unlock and pull out the drum unit.

Small Size Paper Delivery End Plate
Use to align the leading edge of prints that are A4, 8 1/2" x 11" or smaller.

Drum Unit
The master is wrapped around this unit.

Ink Holder
Set the ink cartridge in this holder.

Paper Delivery Table
Completed prints are delivered here.

Power Connection

- ❒ Connect the power cord to an appropriate power source (as described inside of the front cover).
- ❒ Make sure the plug is firmly inserted in the outlet.
- ❒ Avoid multiwiring.
- ❒ Do not pinch the power cord.
- ❒ Make sure that the wall-outlet is near the machine and easily accessible.

OPERATION

Printing Paper

❒ The following types of print paper are not recommended for this machine.

- Paper smaller than 90 mm x 148 mm, 3.6" x 5.9"
- Paper larger than 325 mm x 447 mm, 12.7" x 17.5"
- Paper heavier than 209.3 g/m^2, 55.6 lb
- Paper lighter than 47.1 g/m^2, 12.5 lb
- Roughly-cut paper
- Paper of different thickness in the same stack
- Buckled or curled paper
- Short grain paper
- Low stiffness paper

❒ Maximum print area is as follows:

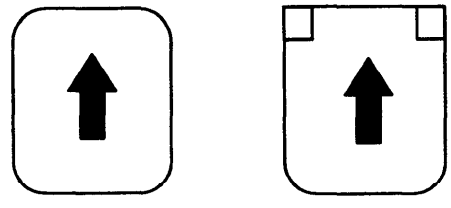
- 290 x 412 mm, 11.4" x 16.2" with A3 drum.
  290 x 204 mm, 11.4" x 8.0" with optional A4 drum.

  A3 (297 x 420 mm), 11" x 17", originals or printing paper can be used, but the maximum print area is 290 x 412 mm, 11.4" x 16.2" at 23°C, 73°F/65%RH. Select Reduction mode to print the entire image of an A3, 11" x 17" original.

❒ Correct curls in the paper before setting it in the machine. When you cannot correct the paper curl, stack the paper with the curl face down. Otherwise the paper might wrap around the drum or stains might appear.

❒ Store paper where it will not curl or absorb moisture. Use paper soon after it is unpacked.

❒ Only use paper where the leading edge has two right angle corners, as shown below.



Not OK OK

Originals

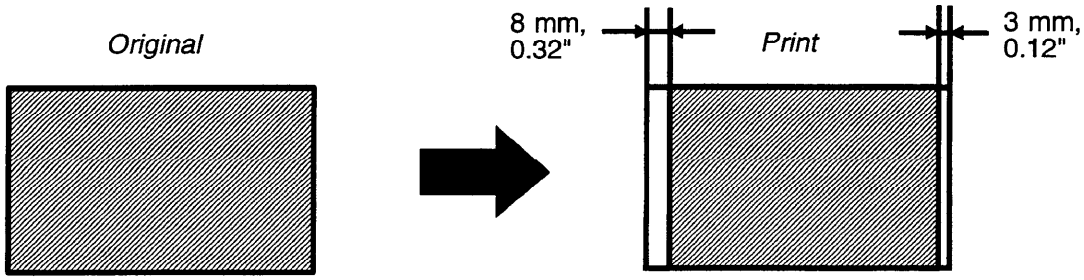
❒ Under the following conditions, the machine might not detect the original on the exposure glass. If you press the **Master Making** key again, the machine will start making master anyway.

- When you set a dark original on the exposure glass.
- When the original is not centered according to the size marks on the left scale.
- If you do not open the platen cover at an angle of more than 25 degrees with the exposure glass when you replace originals.

❒ The maximum original size you can set on the exposure glass is 307 x 432 mm, 12" x 17".

❒ If you use paste-up originals, make sure the pasted parts hold firmly to the base sheet. If the thickness of the paste-up original is more than 0.2 mm, 2/250", a shadow might appear on the prints.

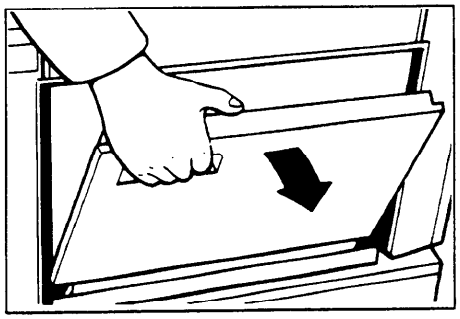
❒ The first 8 mm, 0.32" of the leading edge and the last 3 mm, 0.12" of the trailing edge cannot be printed. Make sure the leading edge margin is at least 8 mm, 0.32" and the trailing edge margin is at least 3 mm, 0.12".



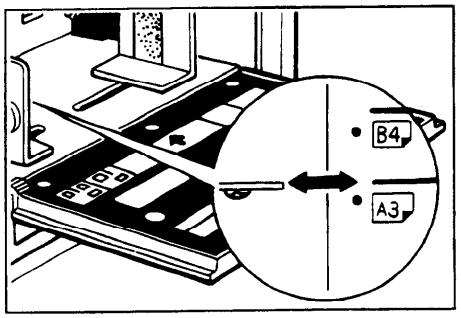
Preparation For Printing

- See page 61 when you load paper in the optional paper cassette.

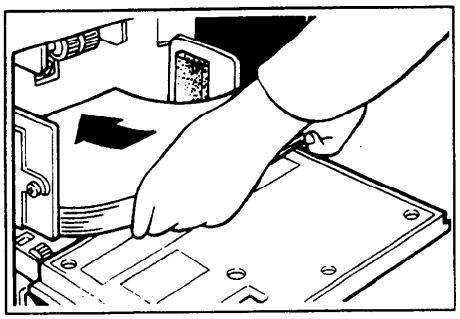
Loading paper



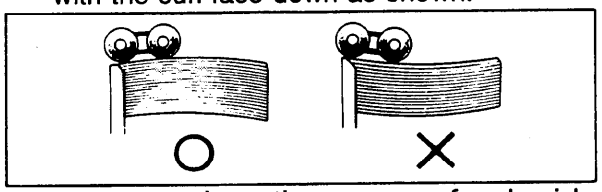
1. Carefully open the paper feed table.

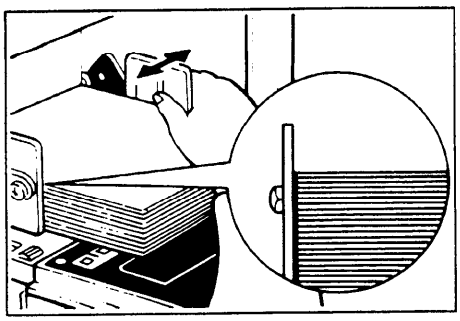


2. Adjust the side plates to match the paper size.



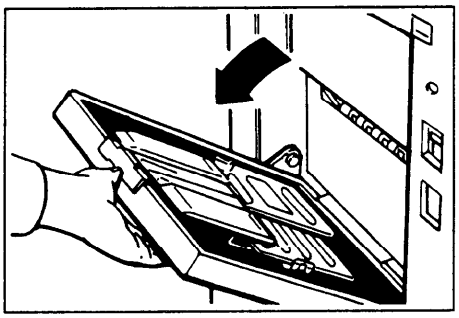
3. Place the paper on the paper feed table.
   - Correct the paper curl before setting the paper. If you cannot do so, stack the paper with the curl face down as shown.



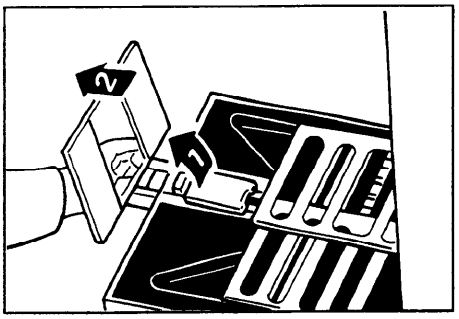


4. Make sure that the paper feed side plates contact the paper lightly.

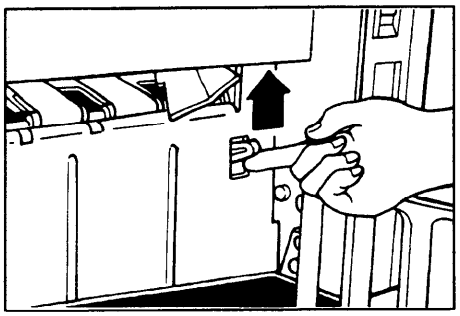
Setting up the paper delivery table



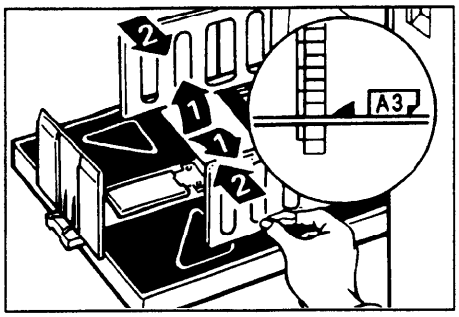
5. Open the paper delivery table.



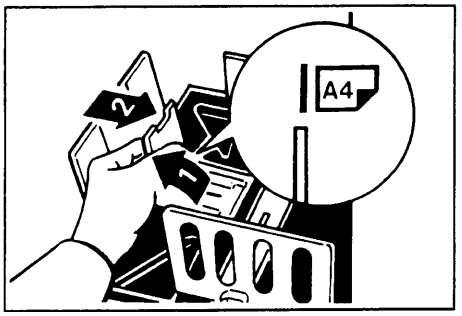
6. Lift the paper delivery end plate and move it to match the print paper size.



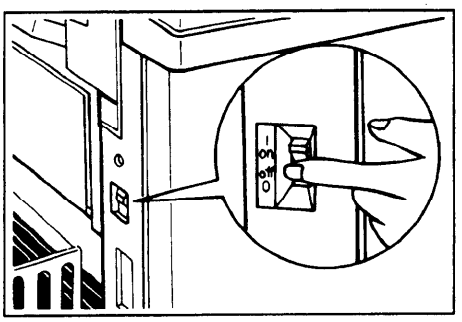
7. If printing on A3, 11" x 17", or larger paper, push up the wing guide release lever. If you want to print on paper smaller than A3 or 11" x 17", push down the release lever.



8. Lift the paper delivery side plates and adjust them to the paper size.

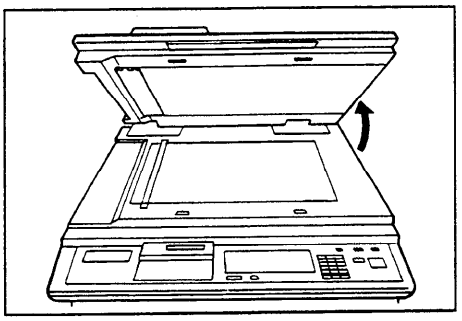


9. If you want to use paper A4, 8 1/2" x 11" or smaller, lift the small size paper delivery end plate and move it to match the print paper size.
   - When you use B4, 8 1/2" x 14" or larger size paper, you do not need to lift the end plate.

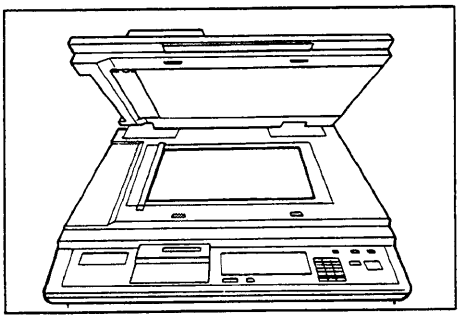


10. Turn on the main switch.

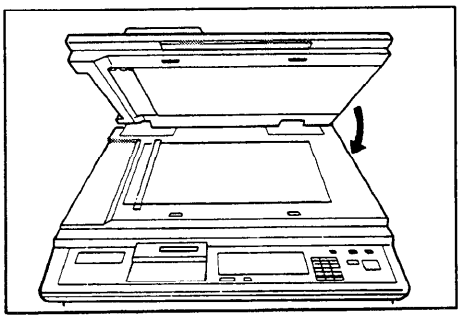
Standard Printing



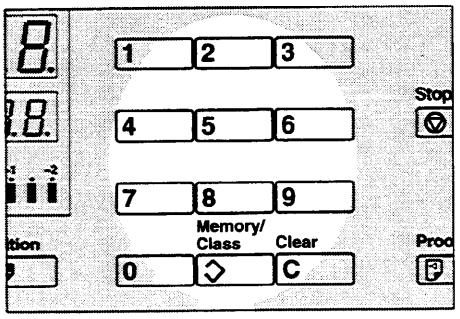
1. Open the platen cover.



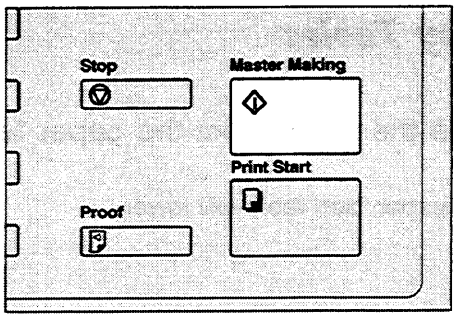
2. Place the original face down on the exposure glass. The original should be centered according to the size marks on the left scale.



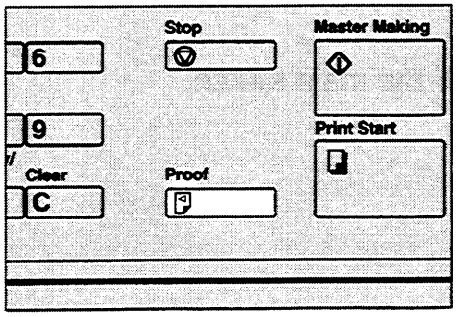
3. Lower the platen cover.



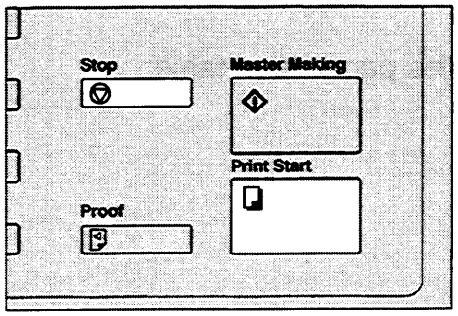
4. Enter the number of prints required using the **Number** keys.
   - Up to 9999 prints can be entered at one time.
   - To change the number entered, press the **Clear** key and then enter the new number.



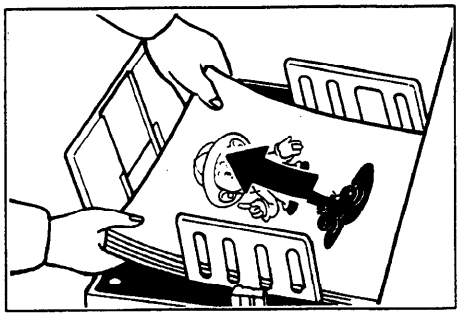
5. Press the **Master Making** key.
   - A trial print is delivered to the paper delivery table.



6. Press the **Proof** key and check the image density and the image position.
   - If the image position is not correct, adjust it using the **Image Position** key or the fine adjustment dial. (See page 16 and 17.)
   - If the image density is slightly dark or light, adjust the image density by pressing the **Speed** key. (See page 19.)

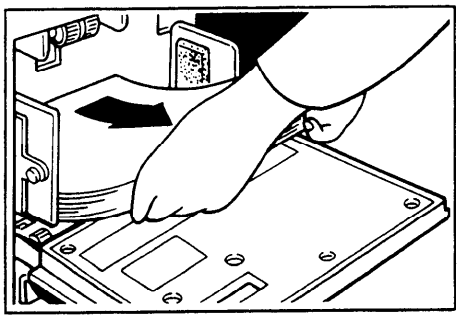


7. Press the **Print Start** key.
   - After printing is completed, the same number of prints is automatically set for the next job.
   - If you want to stop the machine during a print run, press the **Stop** key.

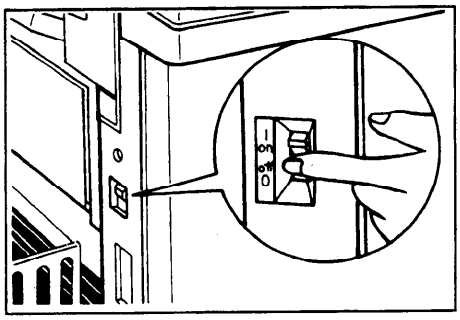


8. Remove the prints from the paper delivery table.
   - Be careful not to let the prints touch the side and end plates while removing the prints.
   - To clear all the modes you have selected, press the **Clear Modes** key.

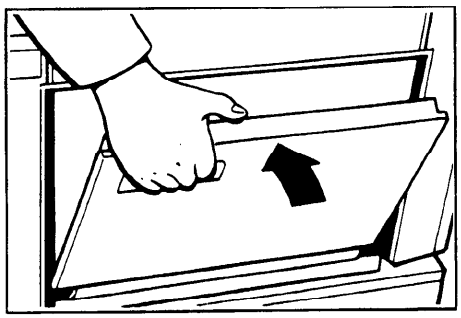
Restoring Paper Feed And Paper Delivery Tables



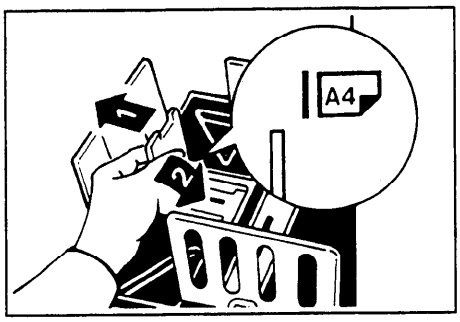
1. Remove the paper from the paper feed table.
   - The paper feed table will lower.



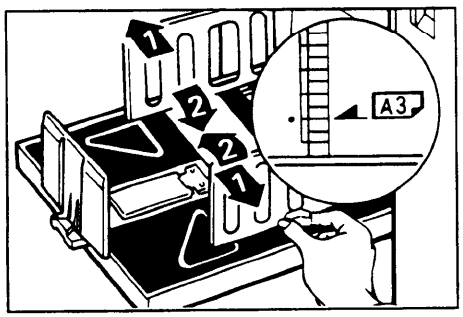
2. Turn off the main switch.



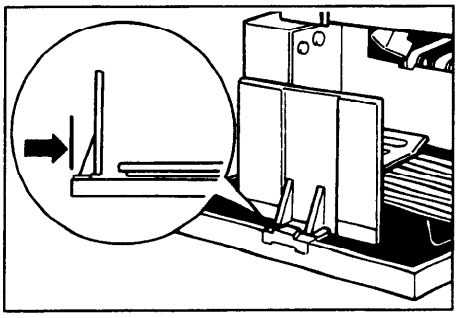
3. Close the paper feed table.



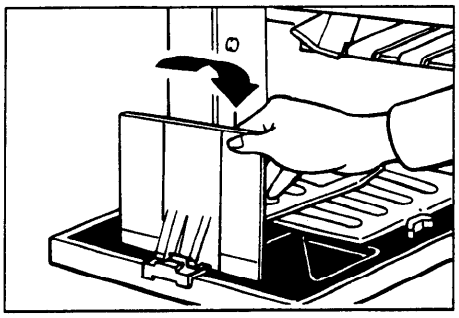
4. Push the small size paper delivery plate to the left, then lower it, if necessary.



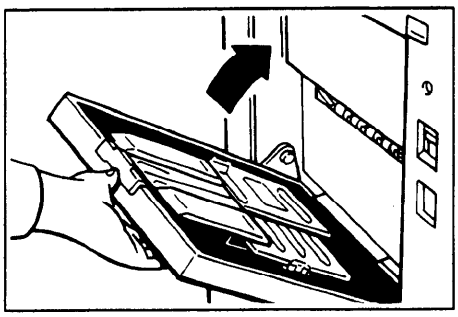
5. Move the side plates to the sides, then lower them.
   - Make sure that the side plates do not touch the small size paper delivery end plate.



6. Move the end plate until the plate handle is flush with the end of the table.



7. Lower the end plate.

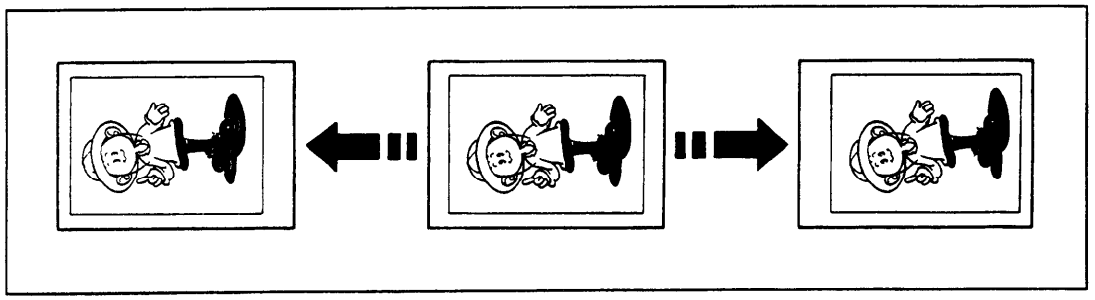


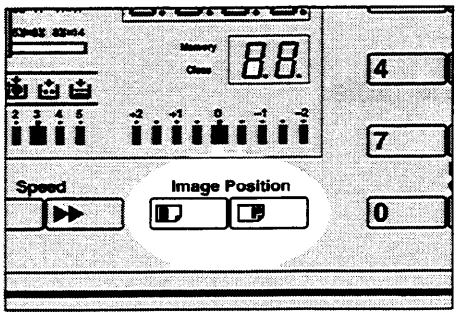
8. Close the table.

Adjusting The Image Position

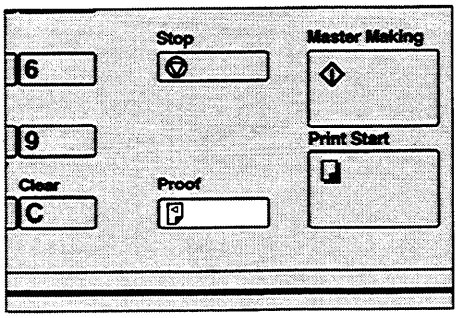
If the image position is not correct, adjust it before you start printing.

Shifting the image position forward or backward



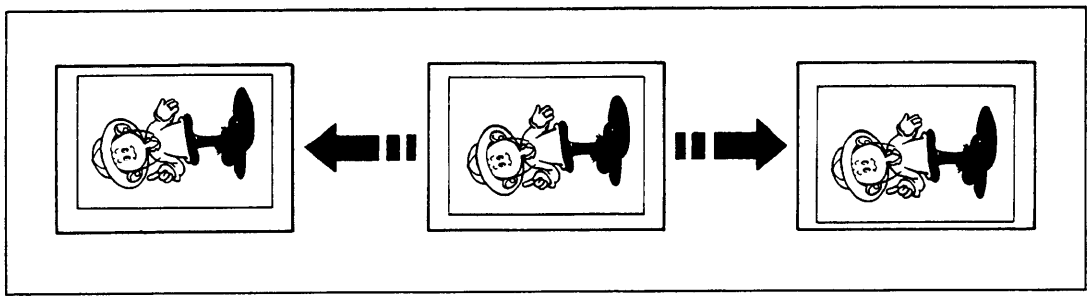


1. Press the right or left **Image Position** key.
   - When you shift the image forwards, leave a margin (more than 8 mm, 0.32") at the leading edge. If there is no margin, paper might wrap around the drum and cause a misfeed.
   - The right or left **Image Position** keys shift the image about 0.5 mm, 1/50" each time they are pressed. When the indicator changes, the image position shifts about 5 mm, 1/5".

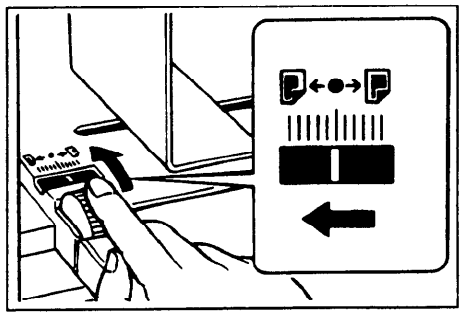


2. Press the **Proof** key. Check the image position again.

Shifting the image to the right or left

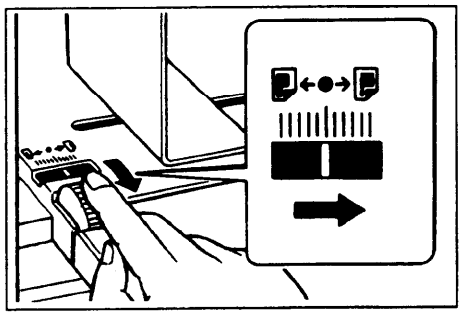


Shifting the image to the right

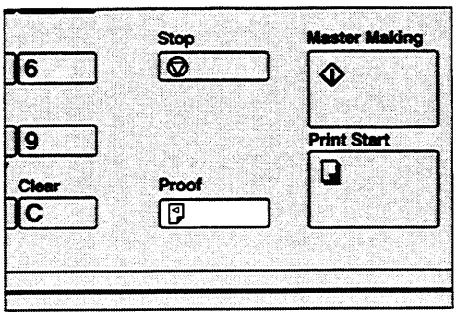


1. Turn the adjusting dial as shown in the illustrations.
   - The image position can be shifted up to 10 mm, 2/5" each way. Each division on the scale is 2 mm, 0.08".

Shifting the image to the left



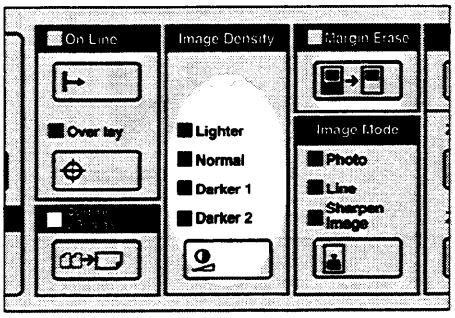
2. Adjust the paper delivery side plates to the print paper position.



3. Press the **Proof** key. Check the image position.

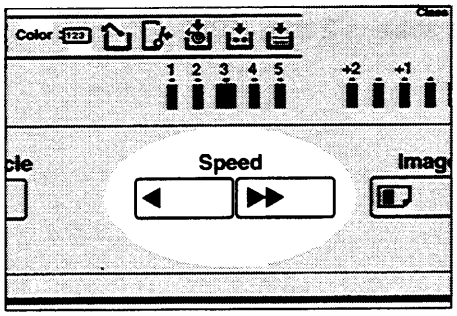
Adjusting The Image Density

Before making a master



Use the **Image Density** key before pressing the **Master Making** key.

After making a master

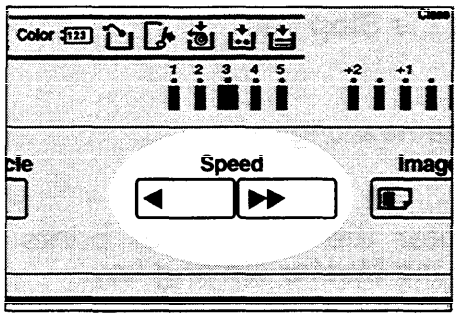


Press the **Speed** keys. To increase the speed, press the "▶▶" key. To reduce the speed, press the "◀" key.

- The faster the printing speed becomes, the lighter the printing density is. If you want darker prints, decrease the printing speed.

Changing The Printing Speed

Use the **Speed** keys to adjust the speed of the machine with the image density and printing paper.



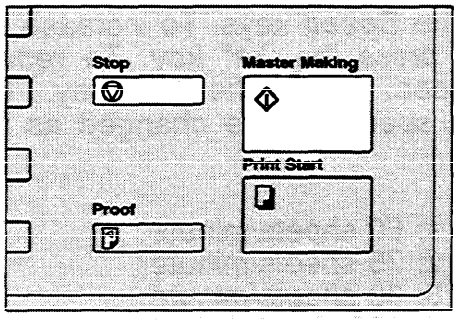
Press the **Speed** keys. To increase the speed, press the "▶▶" key. To reduce the speed, press the "◀" key. The printing speed will be changed as follows:

Setting 1: 60 sheets/minute
Setting 2: 75 sheets/minute
Setting 3: 90 sheets/minute
Setting 4: 105 sheets/minute
Setting 5: 120 sheets/minute

- When the main switch is turned on, setting 3 is selected.
- The faster the printing speed becomes, the lighter the printing density is, and vice versa.

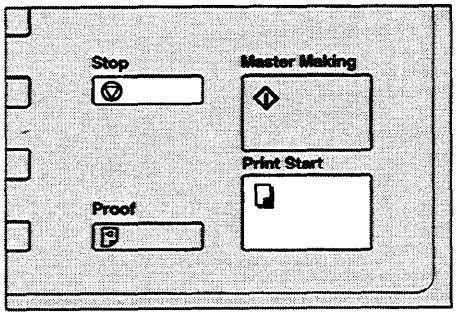
Stopping The Machine During A Printing Run

When you want to stop the machine during a print run and print the next original



1. Press the **Stop** key.
2. Set the new original.
3. Re-enter the number of prints and press the **Master Making** key.

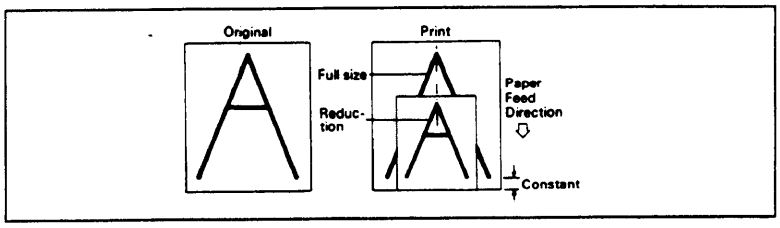
When you want to change the number of prints entered or to check the completed prints



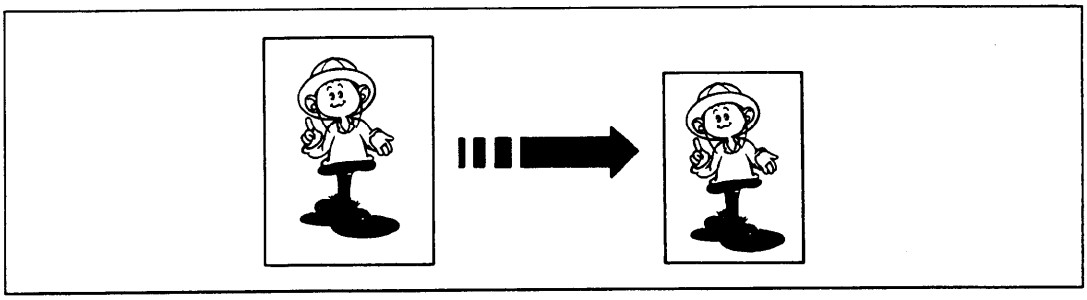
1. Press the **Stop** key.
2. Change the number of prints or check the completed prints.
   - When you change the number of prints, you can re-enter the number using the **Number** keys after pressing the **Stop** key.
3. Press the **Print Start** key.

Reduce/Enlarge Printing

- The center and the leading edge of the print image do not shift when a print image is made with this function.



Reduction



Prints can be reduced in size by using the **Reduce/Enlarge** key.

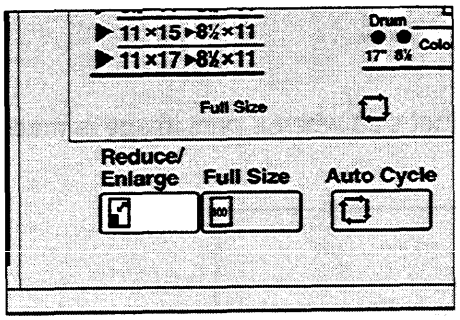
— A4 version —

Reduction Ratio	Original Size	Print Size
93%	❋	
87%	A3	B4
	A4	B5
82%	B4	A4
	B5	A5
71%	A3	A4
	A4	A5
	B4	B5

— 81/2" x 11" version —

Reduction Ratio	Original Size	Print Size
93%	❋	
77%	81/2" x 14"	81/2" x 11"
74%	11" x 15"	81/2" x 11"
65%	11" x 17"	81/2" x 11"
	81/2" x 11"	51/2" x 81/2"

❋ ..... Select this ratio when you make prints with edge margins.

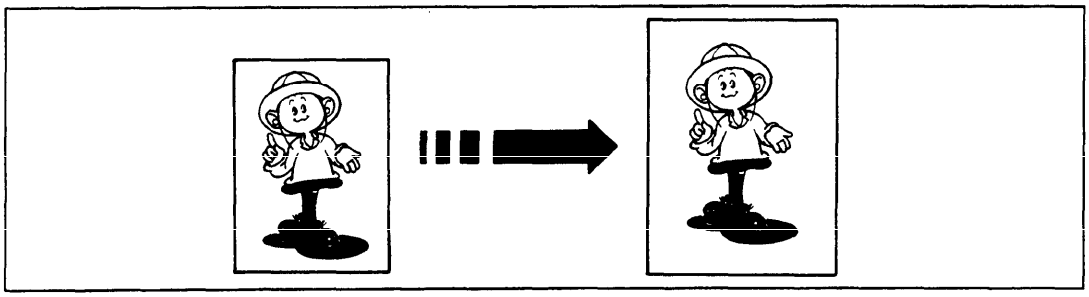


1. Select the desired reduction ratio using the **Reduce/Enlarge** key.

2. Make sure that the original and the print paper are the correct size.

3. Follow the standard printing procedure. (See page 12.)

Enlargement



Prints can be enlarged by using the **Reduce/Enlarge** key.

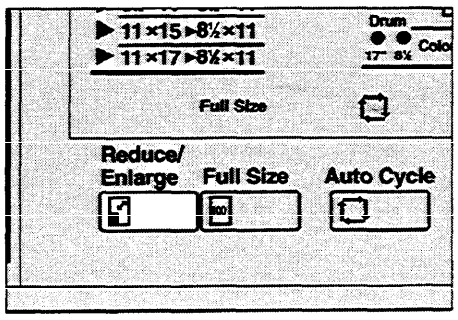
— A4 version —

Enlargement Ratio	Original Size	Print Size
141%	A4	♣ A3
	A5	A4
	B5	B4
	B6	B5
122%	A4	B4
	A5	B5
115%	B4	♣ A3
	B5	A4
	B6	A5

— 8½" x 11" version —

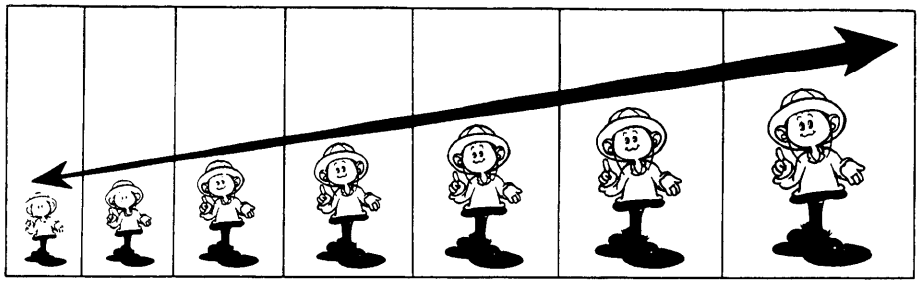
Enlargement Ratio	Original Size	Print Size
155%	5½" x 8½"	8½" x 14"
129%	8½" x 11"	11" x 17"
	5½" x 8½"	8½" x 11"
121%	8½" x 14"	11" x 17"

♣ ... Some part of the image on the trailing edge might not appear. For printing the entire image, adjust the enlargement ratio with the Zoom Down (-) key.

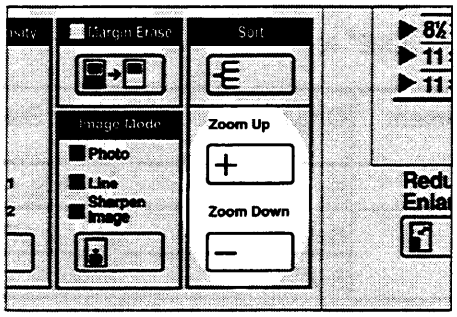


1. Select the desired enlargement ratio using the **Reduce/Enlarge** key.
2. Make sure that the original and the print paper are the correct size.
3. Follow the standard printing procedure. (See page 12.)

Zoom



In this mode, the reproduction ratio can be changed from 50% to 200% in 1 percent steps.



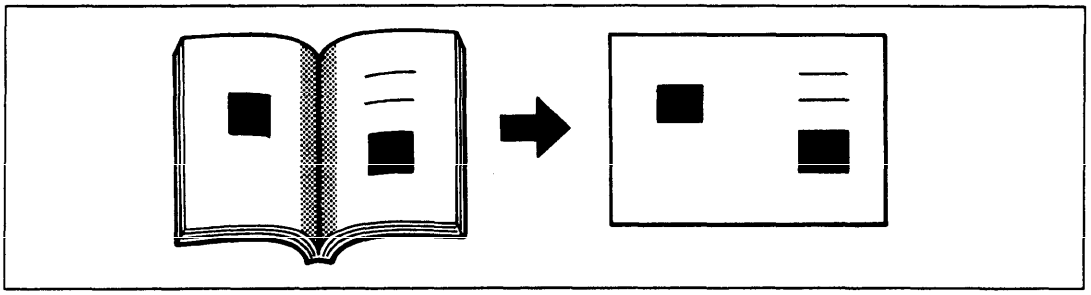
1. Press the **Zoom Down** (–) key repeatedly to reduce the ratio in 1% steps.

   Or, press the **Zoom Up** (+) key repeatedly to increase the ratio in 1% steps.

2. Make sure that the original and the print paper are the correct size.

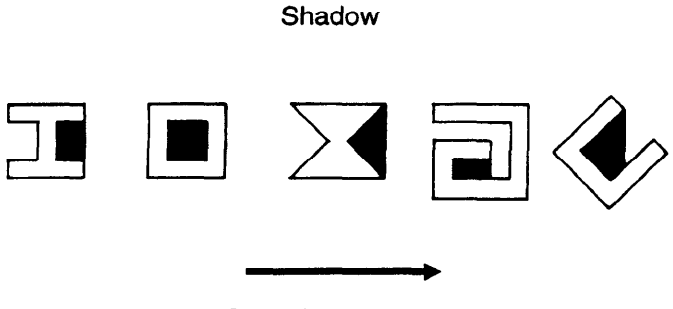
3. Follow the standard printing procedure. (See page 12.)

Erasing Center And Edge Margins

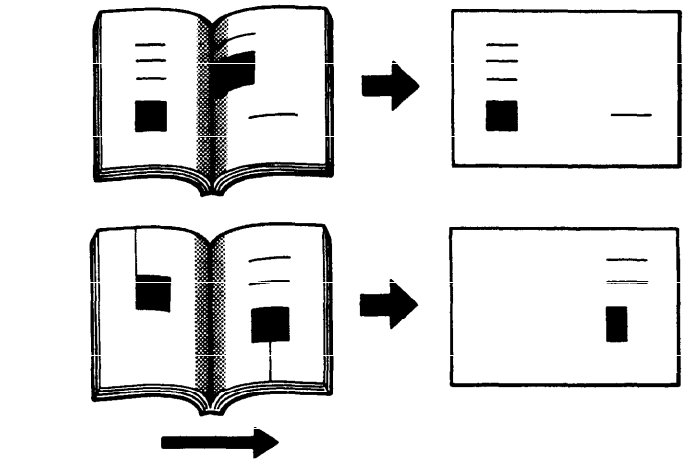


When printing from thick books, or similar originals, the binding margin at the center and the edges might appear on prints. To prevent this, follow the steps on the next page.

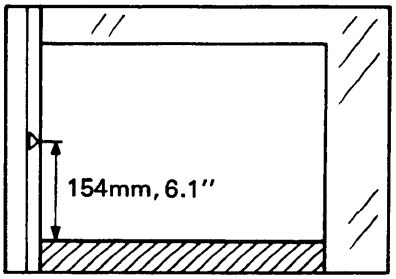
- The 1 mm, 0.02" margins on all four sides of the original will be erased. The width of the margins will change depending on the reproduction ratios.
- Shadows near the book edge might not be erased completely.
- If the shape of the originals are as below, shadows might appear on the prints. In this case, make master with the platen cover closed.



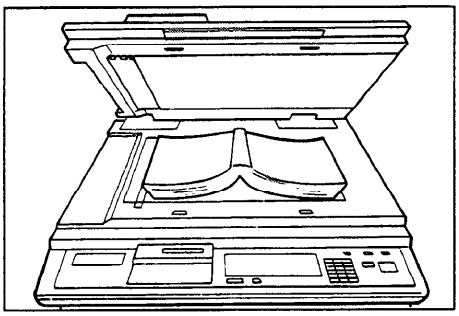
- If the line or solid image is on the margin at the center and edges being erased, the image might be erased as shown below. In this case, use the function described on page 27.



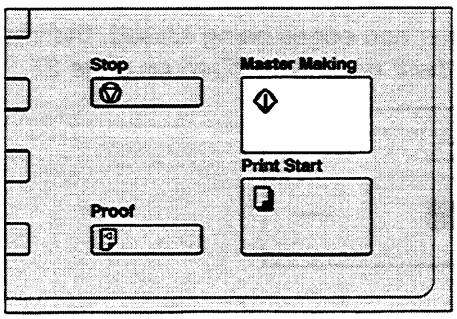
- If you do not press hard on the book while it is scanned, the margin at the center might not be erased completely.
- If the machine is installed under a strong light, such as a fluorescent light, a shadow might appear on the prints. In this case, close the platen cover a little to block the light or move the machine.
- If you set the original on the exposure glass as follows, screened image below will not be printed. Also, if there are lines or solid image on the screened image, they might not appear on the prints.



1. Set the book on the exposure glass.

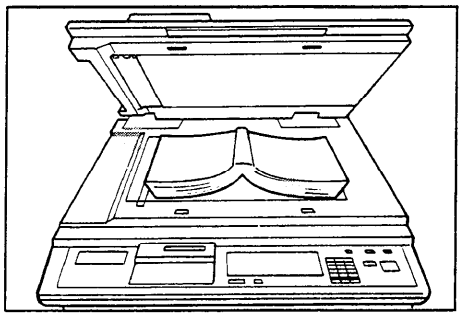


2. Keep the platen cover at an angle of at least 25 degrees with the exposure glass.

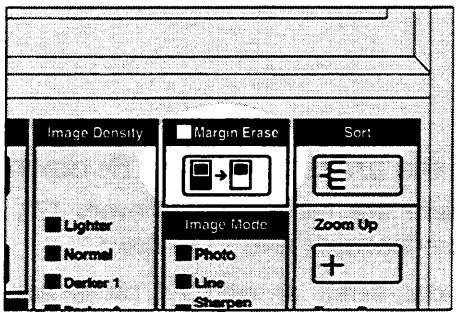


3. Press the **Master Making** key. Press hard on the book by hand while it is scanned.

If you reproduce originals that have solid images at the edges, erasing the binding and edge shadows will also erase solid images at the edge. To reproduce the solid image, follow the steps below.



1. Set the original on the exposure glass.

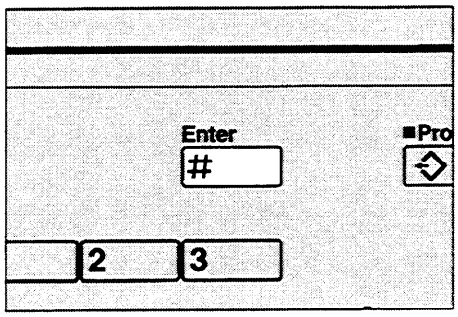


2. Enter the number of prints required using the **Number** keys.

3. Press the **Margin Erase** key.

4. The following message will appear on the display. The paper size and direction will be changed by pressing the **Zoom** key.

SCROLL BY ZOOM KEY (YYY x XXXmm)

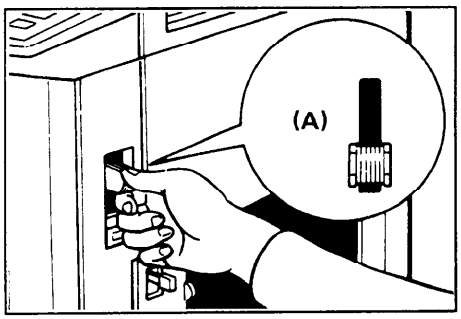


5. When you reach the desired paper size and direction, press the **Enter** key. Then, make the master.

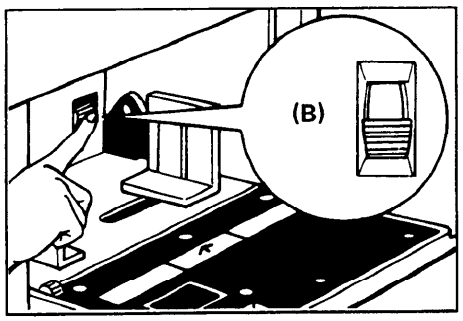
Printing On Thick Or Thin Paper

When you make prints on thick (127.9 to 209.3 g/m^2, 34.0 to 55.6 lb) or thin (47.1 to 52.3 g/m^2, 12.5 to 13.9 lb) paper, do the following steps.

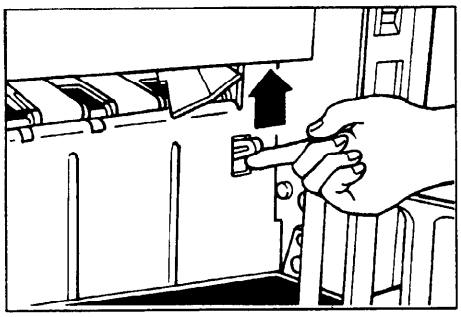
Printing on thick paper



1. Push the pressure lever (A) down.
   - In the case of paper smaller than B5, 5 1/2" x 8 1/2" and heavier than 127.9 g/m^2 (34.0 lb), move the feed roller pressure lever to the standard position.

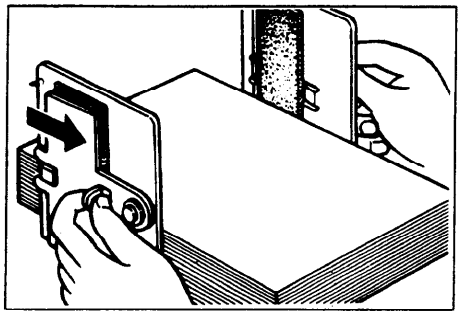


2. Push the pressure levers (B) down.
   - There are two pressure levers (B). Make sure that both levers are down.
   - If dog-eared or wrinkled prints are delivered, push the levers up.

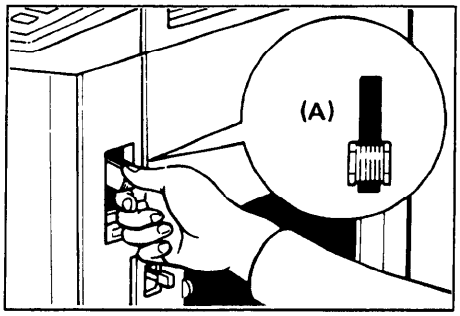


3. Pull the release lever up.

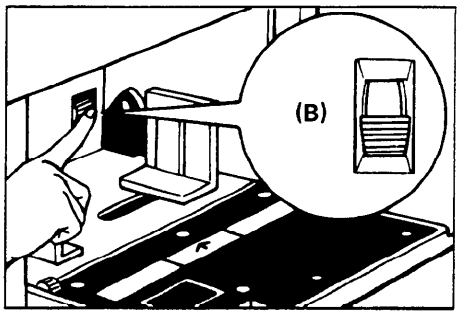
Printing on thin paper



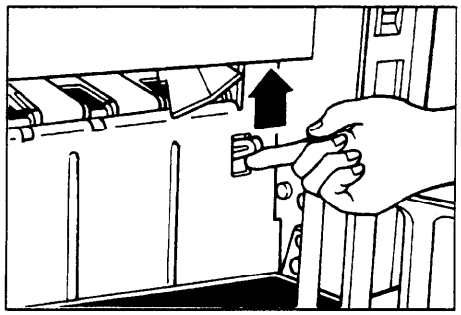
1. Set the side pads (move the side pad levers to the right).



2. Pull the pressure lever (A) up.



3. Push the pressure levers (B) down.
   - If dog-eared or wrinkled prints are delivered, push the levers up.
   - There are two pressure levers (B). Make sure that both levers are down.

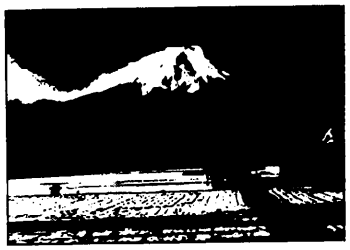


4. Set the wing guide release lever to match the print paper size.

Photo Mode Printing

Original

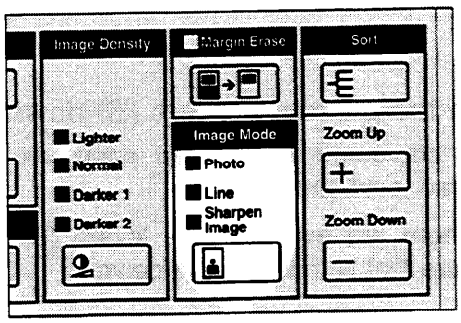
Photo mode



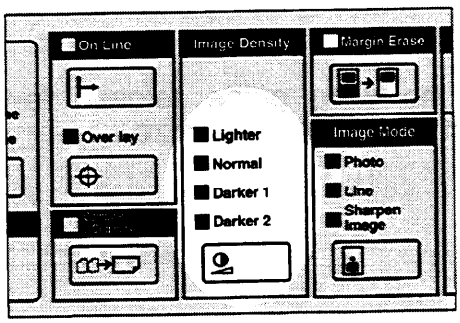
Line mode

When printing a photograph or a color original, select Photo mode.

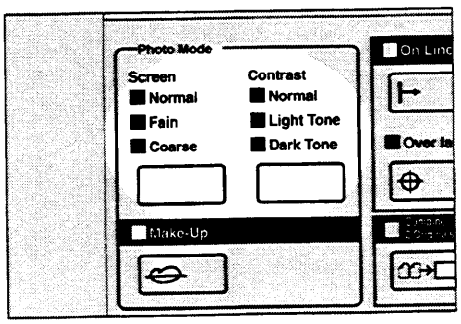
- Moire patterns may occur when screened originals are printed.
- When printing originals with letters and photos using Photo mode, the image of the letters will be light. Select Line mode for letter areas and Photo mode for photo areas in the optional Make-up function.



1. Press the **Image Mode** key to select Photo mode.



2. Press the **Image Density** key to adjust the image density.



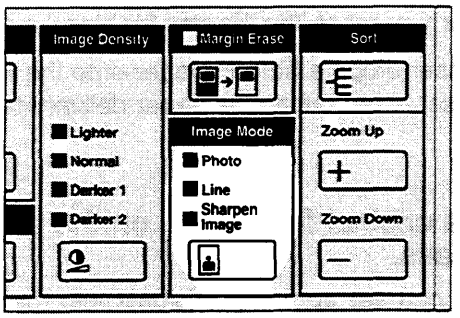
3. Adjust the screen image by pressing the **Screen** key, if necessary.

   Adjust the contrast by pressing the **Contrast** key, if necessary.

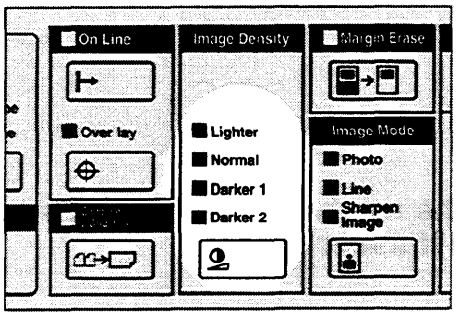
4. Follow the standard printing procedure. (See page 12.)

Sharpen Image Mode Printing

When the original is mostly made up of bold lines and characters, this mode keeps the image sharp.



1. Press the **Image Mode** key to select Sharpen Image mode.



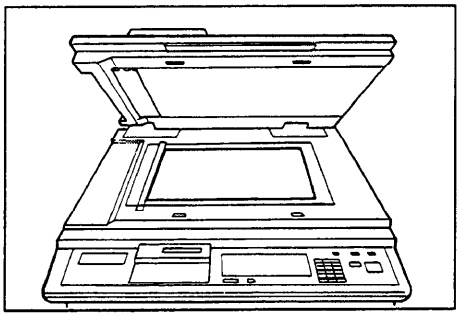
2. Press the **Image Density** key to adjust the image density.

3. Follow the standard printing procedure. (See page 12.)

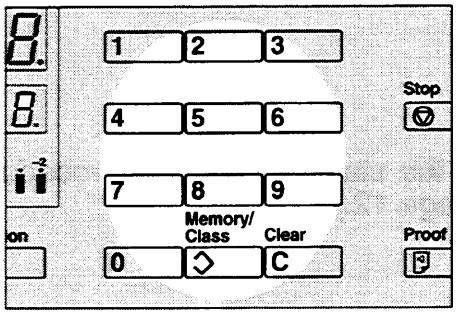
Printing From Several Originals At Once

Use the **Auto Cycle** key to process masters and make prints at one stroke.

- When you use the optional document feeder, it is not necessary to place originals one by one. All originals are fed and prints are completed after you press the **Master Making** key.
- If you use the optional tape dispenser, the tape dispenser drops a strip of paper onto the top of the paper stack after the last page of each printing set is fed out to the paper delivery table. This marks the end of each printing group.

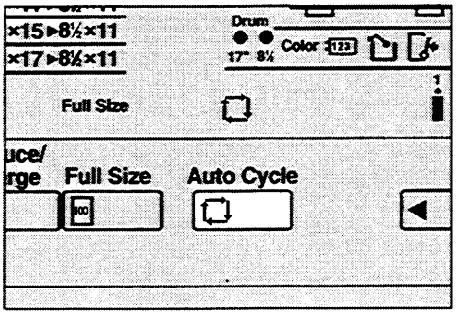


1. Set the original face down on the exposure glass.
   - You can set up to 20 originals into the optional document feeder.

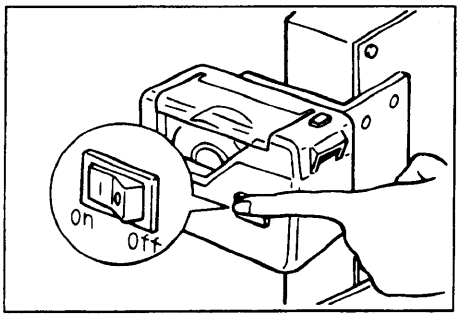


2. Enter the number of prints required using the **Number** keys.

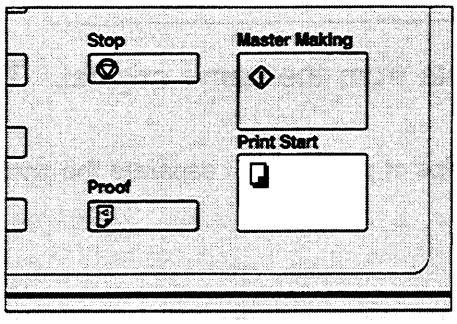
3. Press the **Master Making** key. Check the image position on the trial print.



4. Press the **Auto Cycle** key.
   - The Auto Cycle indicator will light.
   - If you press the **Auto Cycle** key, you cannot make trial prints by pressing the **Proof** key.



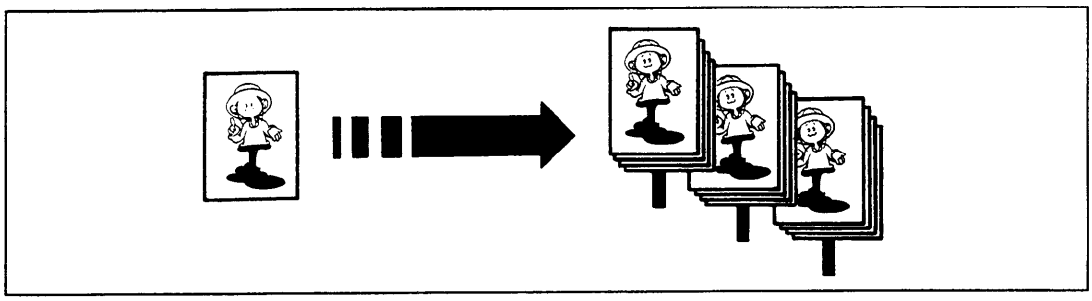
5. If you use the optional tape dispenser, turn on the power switch of the tape dispenser.



6. Press the **Print Start** key.
   - If you set originals into the document feeder, originals are fed and prints are completed automatically.

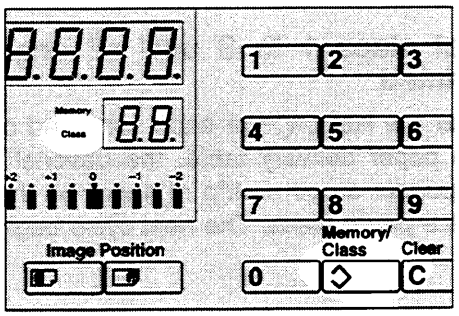
7. Repeat steps 1 to 3 until all originals are printed.
   - After the last page of each set is fed out to the paper delivery table, the optional tape dispenser drops a strip of paper on the top of the paper stack. The next cycle begins.

Group Printing From The Same Original (Class Mode)

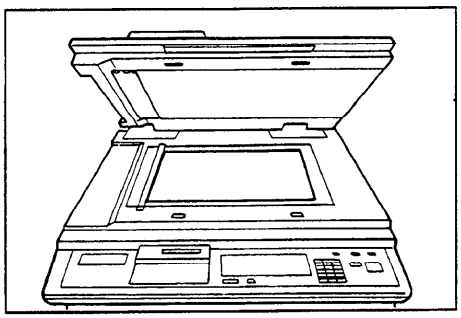


Use the **Memory/Class** key to make sets of prints from the same original. The same number of prints is made for each set.

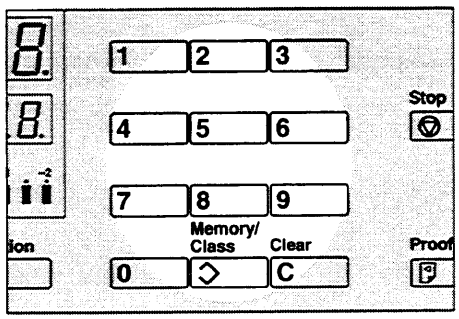
- The optional tape dispenser automatically feeds out strips of paper which separate the printing groups on the paper delivery table.
- Up to 20 sets of prints can be selected for one original.



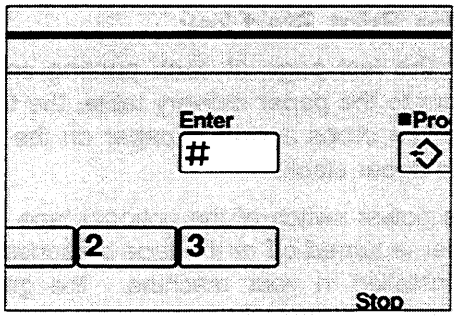
1. Press the **Memory/Class** key to light the Class indicator.



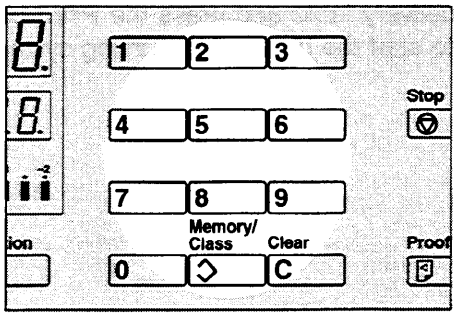
2. Set the original face down on the exposure glass.



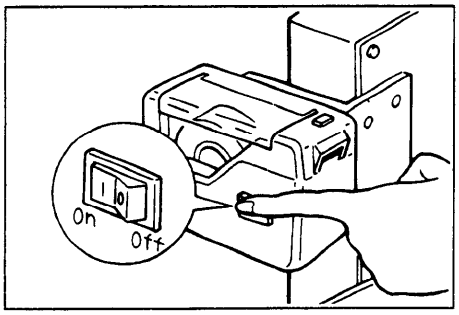
3. With the **Number** keys, enter the number of prints for each set to be made from the original.



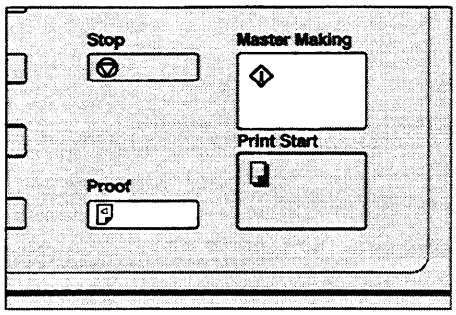
4. Press the **Enter** key.



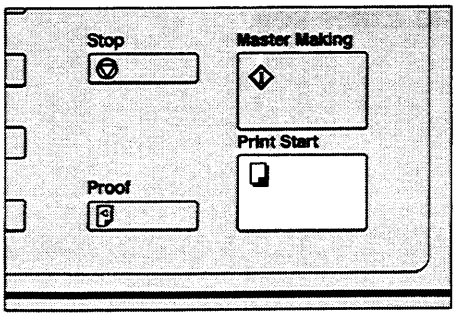
5. With the **Number** keys, enter the desired number of sets.
   - The maximum number of sets that can be made is 20.



6. Turn on the power switch of the optional tape dispenser.

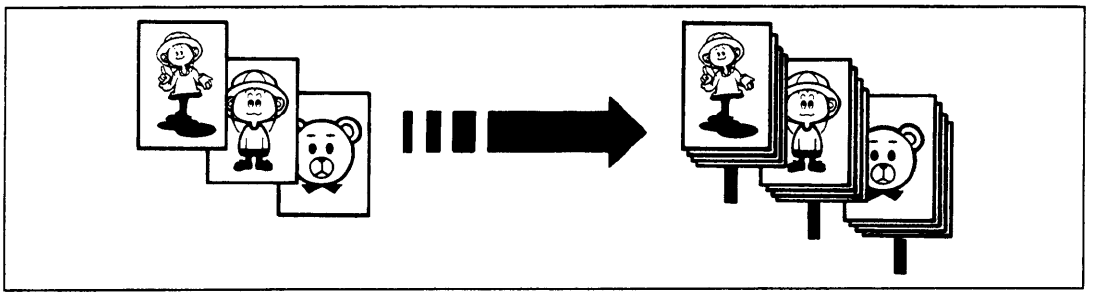


7. Press the **Master Making** key. Check the image position by making prints with the **Proof** key.
   - If the image position is not correct, adjust it using the **Image Position** key (See page 16) or the side plate fine adjusting dial. (See page 17.)



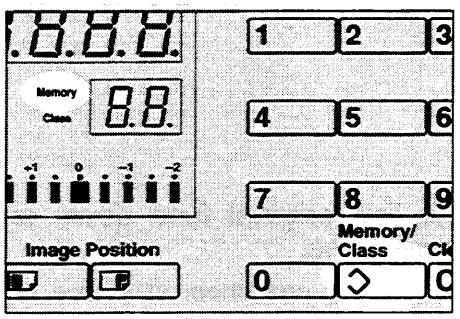
8. Press the **Print Start** key.
   - After the last page of each printing set is fed out to the paper delivery table, the tape dispenser drops a strip of paper on the top of the paper stack.
   - If the power switch of the optional tape dispenser is turned off or the tape dispenser is not installed in your machine, the group printing cycle stops after each set is delivered. Remove the set of prints from the paper delivery table and press the **Print Start** key to start the next group printing cycle.

Group Printing From Different Originals (Memory Mode)

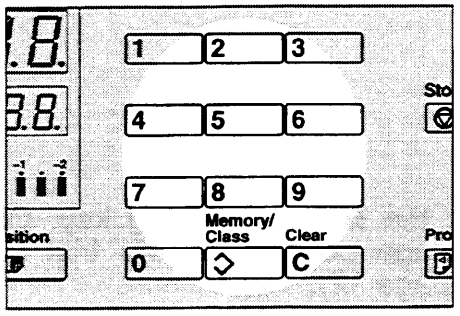


Use the **Memory/Class** key to make sets of prints from different originals.

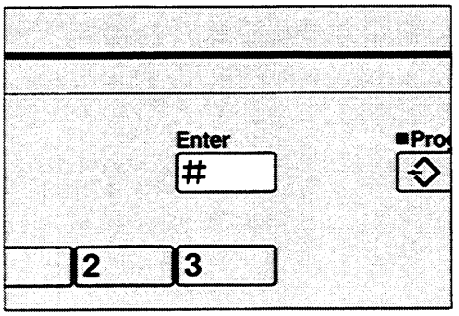
- With the optional document feeder, you can set several originals and make prints of all of them at once. For detail, see page 53.
- The optional tape dispenser automatically feeds out strips of paper which separate the printing groups on the paper delivery table.



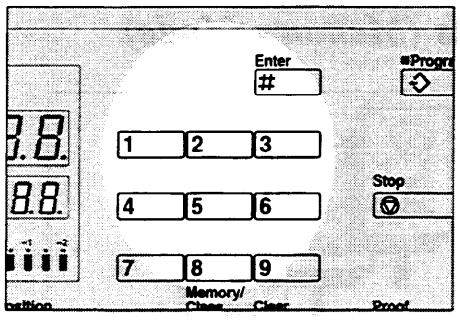
1. Press the **Memory/Class** key to light the Memory indicator.



2. With the **Number** keys, enter the desired number of prints for the first original.



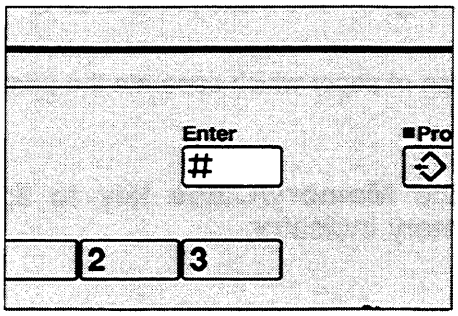
3. Press the **Enter** key. This stores the number of prints to be made for the first original in memory 1.
   - When the number of prints in each set is the same, it is not necessary to input the number of prints for each group in memory. Simply select the Auto Cycle mode and enter the desired number of prints once.



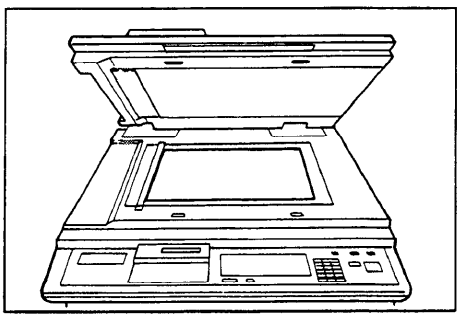
4. With the **Number** keys, enter the number of prints for the second original.

5. Press the **Enter** key. This stores the number of prints to be made for the second original in memory 2.

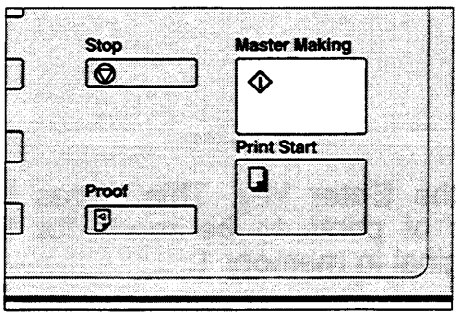
6. Repeat steps 4 and 5 for each original.
   - The number of prints can be stored in memory for 1 to 15 originals.



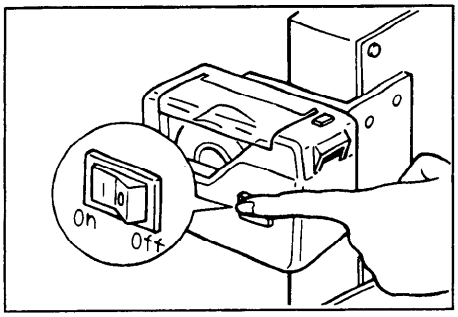
7. Press the **Enter** key again. The memory returns to memory 1.
   - If you store the number of prints for 15 originals, the memory number returns to 1. It is not necessary to press the **Enter** key.



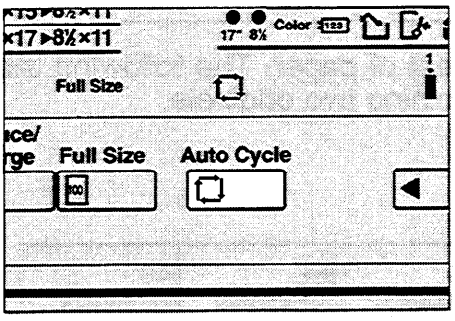
8. Set the first original face down on the exposure glass.
   - Set originals one sheet at a time in order that you store in memory.



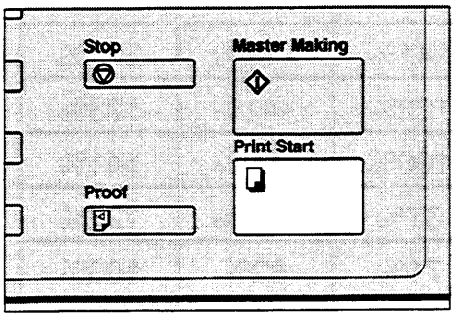
9. Press the **Master Making** key. Check the image position on the trial prints. (See page 12).



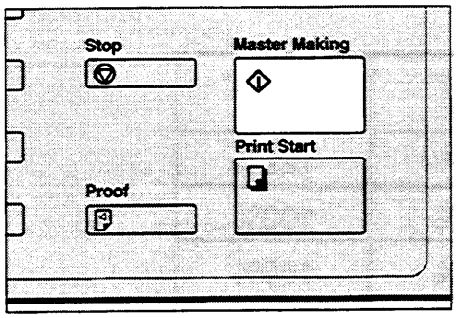
10. Turn on the power switch of the optional tape dispenser.



11. Press the **Auto Cycle** key.
    - If you press the **Auto Cycle** key, you cannot make trial prints by pressing the **Proof** key.



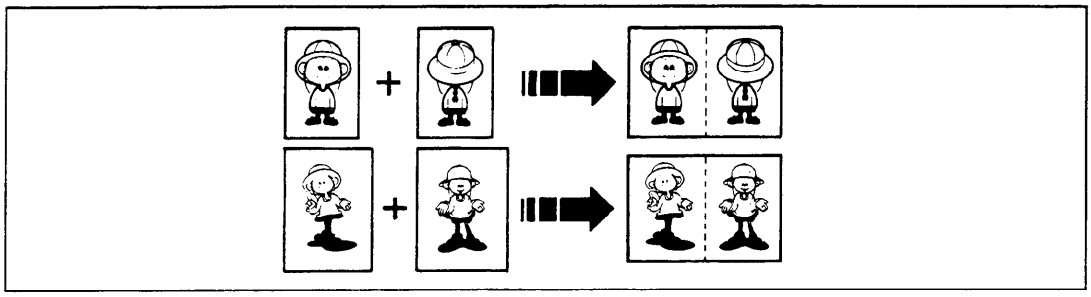
12. Press the **Print Start** key.
    - After the first set is fed to the paper delivery table, the tape dispenser drops a strip of paper on the top of the paper stack.



13. After the first set is completed, set the second original on the exposure glass and press the **Master Making** key.

14. Repeat step 13 until you have finished printing.

Combine 2 Originals



You can print 2 separate originals on a single sheet of paper. The following tables list the combinations that can be used when combining two originals.

— A4 version —

Original Size / Paper Size	A4 sideways	B5 sideways	A5 sideways	B6 sideways	A6 sideways
A3 lengthwise	100%	115%	141%	163%	200%
B4 lengthwise	87%	100%	122%	141%	173%
A4 lengthwise	71%	82%	100%	115%	141%
B5 lengthwise	61%	71%	87%	100%	122%
A5 lengthwise	50%	57%	71%	82%	100%

— 8 1/2" x 11" version —

Original Size / Paper Size	8 1/2" x 11" sideways	5 1/2" x 8 1/2" sideways
11" x 17" lengthwise	100%	129%
8 1/2" x 14" lengthwise	77%	100%
8 1/2" x 11" lengthwise	65%	100%
5 1/2" x 8 1/2" lengthwise	50%	65%

❒ If the first original is wider than the maximum allowable width for combined prints, the Combine 2 Originals mode will be canceled automatically after the first original is on the master. The following table gives the maximum allowable combined print width for each print paper size.

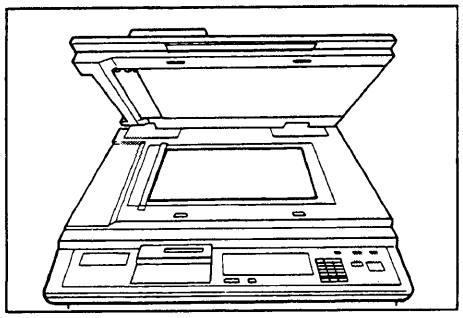
Print paper size	*Maximum allowable original width for combining prints*
A3	210 mm
B4	182 mm
A4 lengthwise	148 mm
B5 lengthwise	128 mm
A5 lengthwise	105 mm
11" x 17"	216 mm, 8.5"
8 1/2" x 14"	178 mm, 7.0"
8 1/2" x 11" lengthwise	140 mm, 5.5"
5 1/2" x 8 1/2" lengthwise	108 mm, 4.3"

Maximum allowable original width = actual original width x magnification ratio

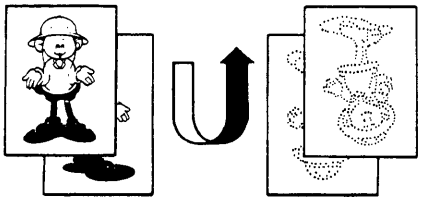
❒ Any image closer than 8 mm, 0.32" to the leading edge of the first original will not be printed. Also, any image closer than 4 mm, 0.16" to the leading edge of the second original will not be printed. When the image is too close to the leading edge, use a copy of the original with the image shifted at least 8 mm, 0.32" for the first original (4 mm, 0.16" for the second original) from the leading edge.

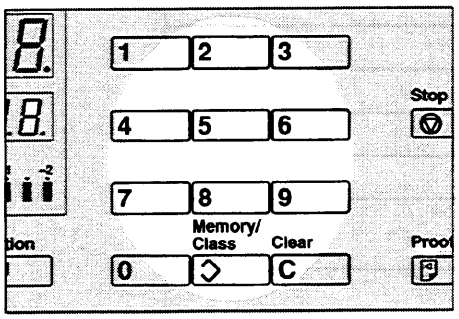
❒ You can select a different kind of image settings for the first and second original.

❒ When you use the optional document feeder with this function, see page 52.



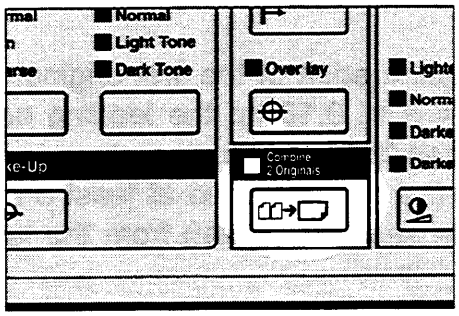
1. Set the first original face down and with the top toward the operating side.
   - The first original will be printed on the leading part of print.



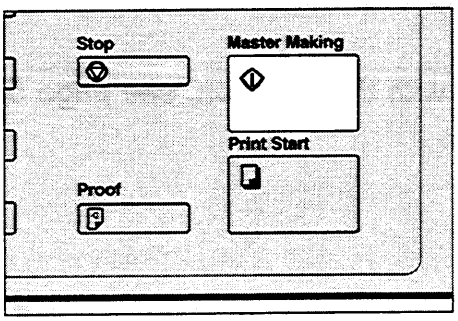


2. Enter the number of prints using the **Number** keys.

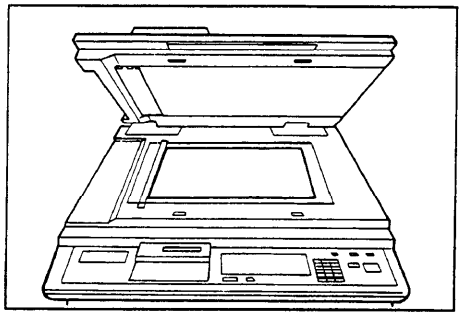
3. Check the print paper size and the reproduction ratio.



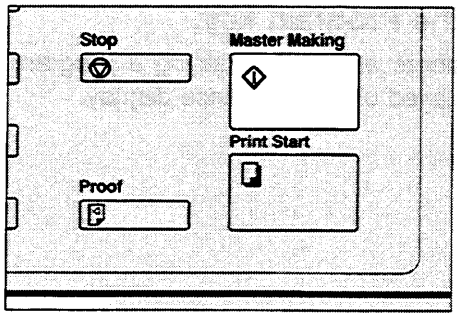
4. Press the **Combine 2 Originals** key.
   - The **Combine 2 Originals** indicator will light.



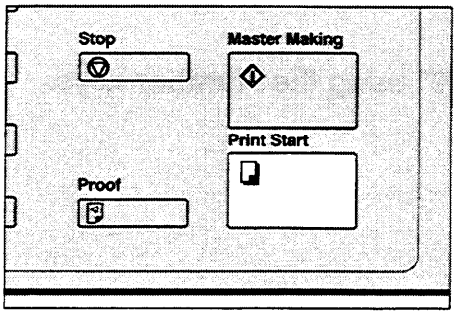
5. Press the **Master Making** key.



6. The beeper sounds after the first original is on the master. Set the second original face down and with the top toward the operating side.



7. Press the **Master Making** key.



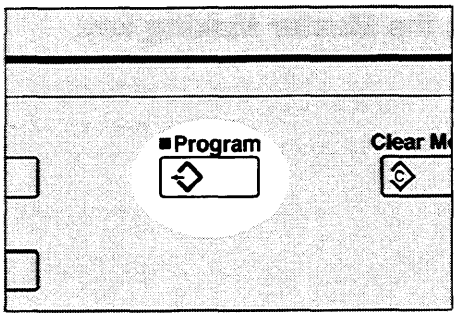
8. Check the image position of trial prints and press the **Print Start** key.

User Program

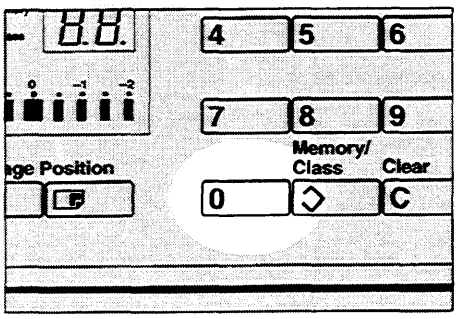
This User Program function allows you to store and recall up to 5 frequently used job setups.

How to input a user program

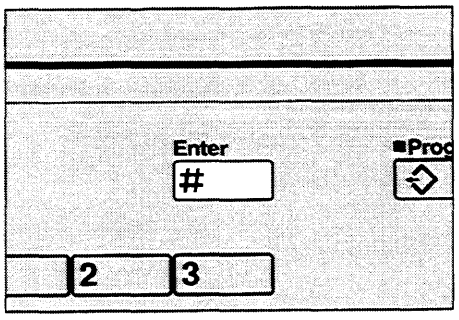
1. Select and enter the job settings you want to store in memory.



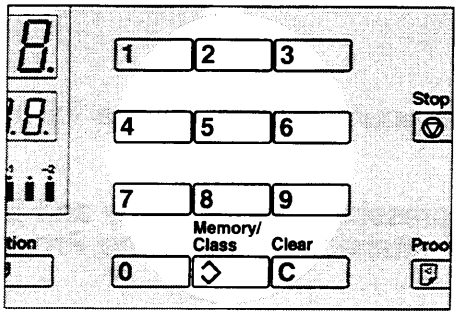
2. Press the **Program** key.
   - Numbers already containing a program are displayed on the guidance display.



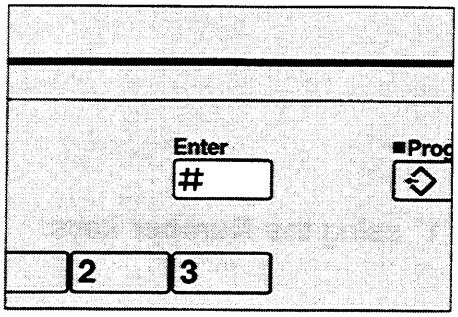
3. Enter "0" using the **Number** keys.



4. Press the **Enter** key.
   - The program numbers (1-5) will be displayed in the guidance display.
   - If a user program has been protected, that program number will not appear in the display. For changing a protected user program, see page 46.
   - If all the user programs have been protected, the machine returns to the ready condition.



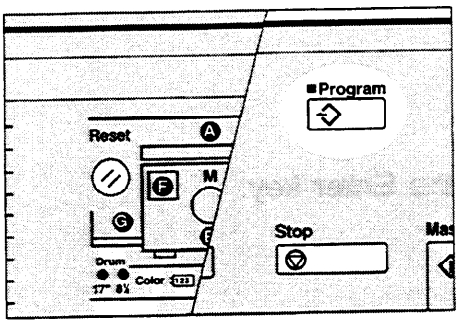
5. Enter one of the program numbers displayed on the guidance display using the **Number** keys.
   - Make sure that the previous job setup stored under the selected program number are overwritten.



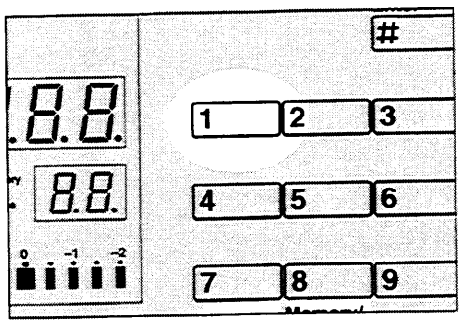
6. Press the **Enter** key.

How to protect a program

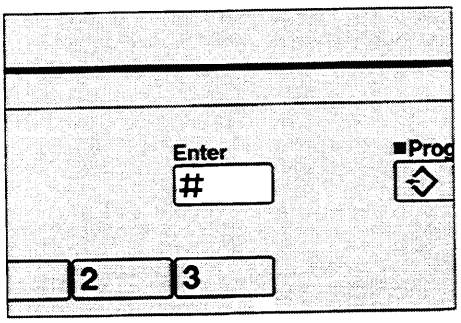
If you want to prevent someone from writing over your program, do the following procedure.



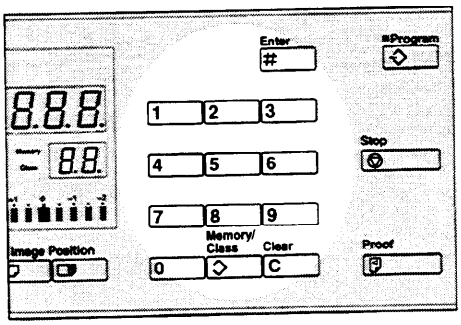
1. While pressing the **Reset** key and **Stop** key simultaneously, press the **Program** key.



2. Enter "1" using the **Number** keys.



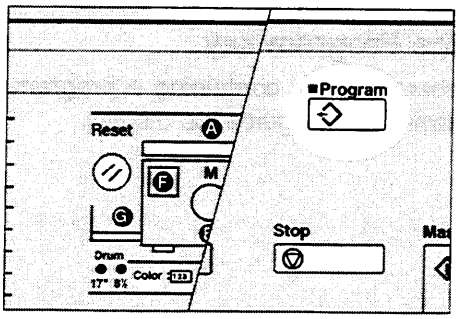
3. Press the **Enter** key.
   - The numbers of the programs which are not protected will be displayed in the guidance display.



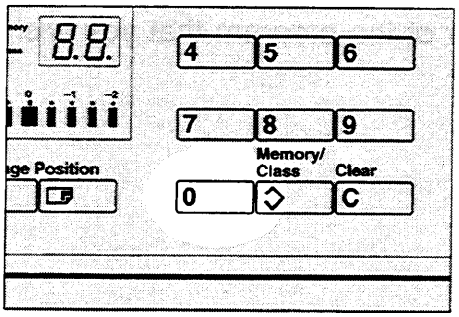
4. Using the **Number** keys, enter the number of the program that you wish to protect.

5. Press the **Enter** key.

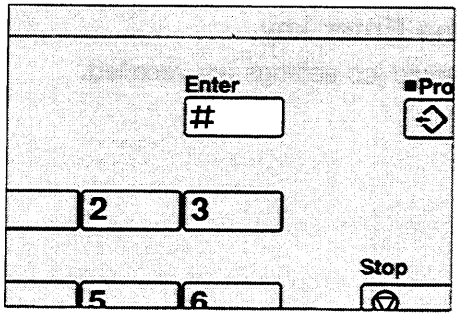
How to remove user program protection



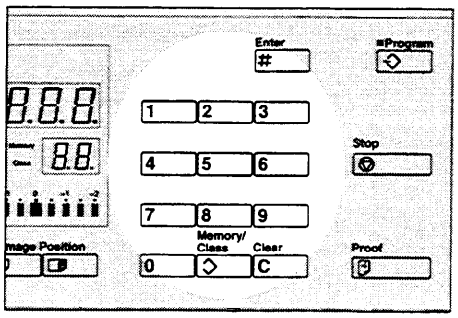
1. While pressing the **Reset** key and **Stop** key simultaneously, press the **Program** key.



2. Enter "0" using the **Number** keys.



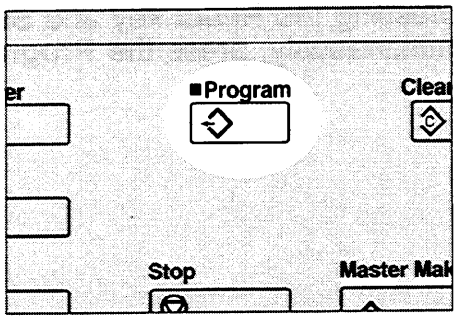
3. Press the **Enter** key.
   - If no program number is protected, the machine returns to the ready condition.



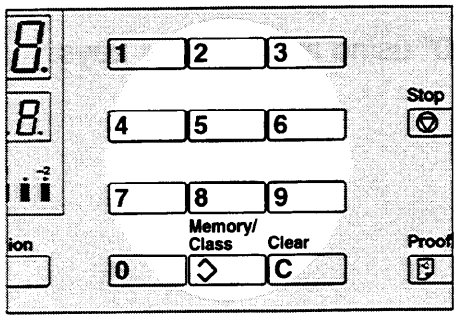
4. Using the **Number** keys, enter the number of the program that you wish to remove protection from.

5. Press the **Enter** key.

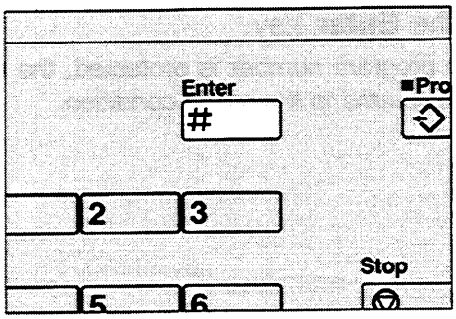
How to access a user program



1. Press the **Program** key.
   - Numbers already containing a program are displayed on the guidance display.



2. Using the **Number** keys, enter the number of the program that you wish to access.

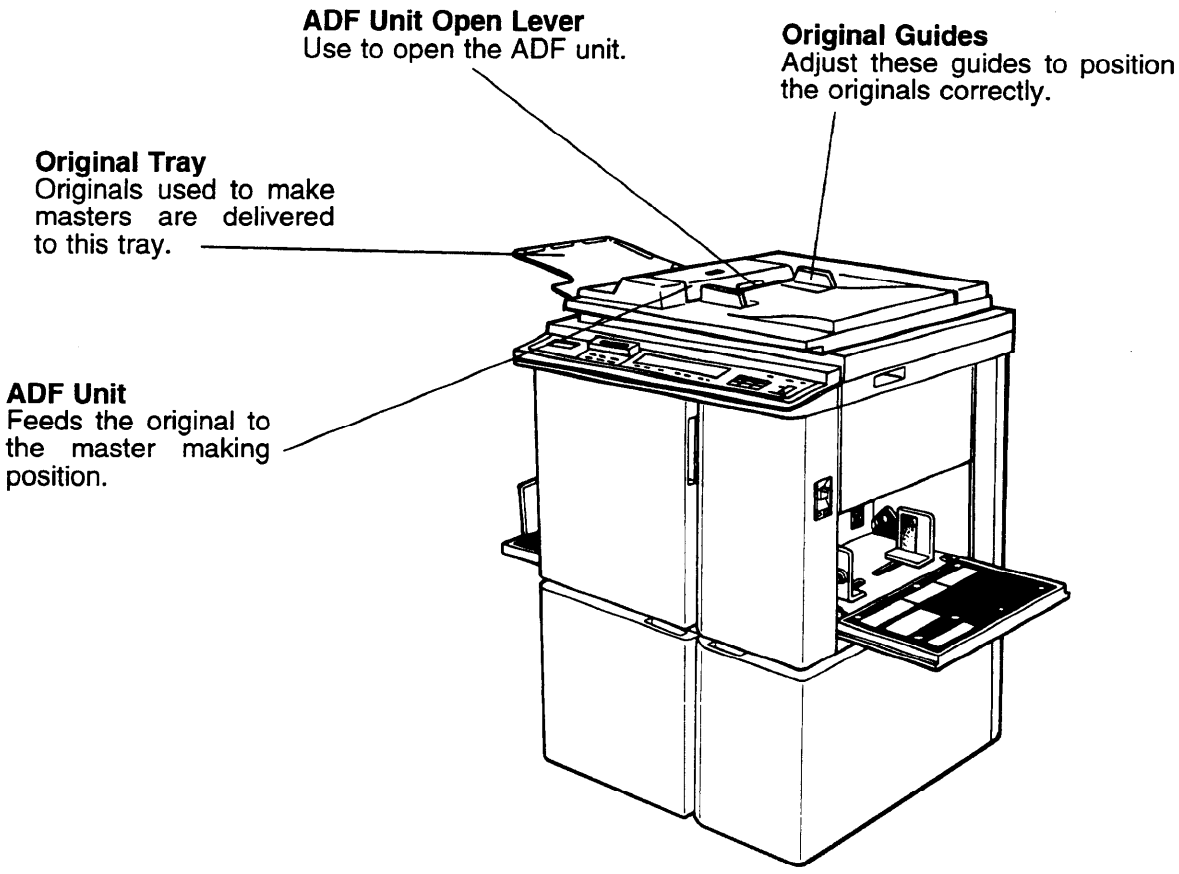


3. Press the **Enter** key.
   - All stored job settings are recalled.

OPTIONAL FUNCTIONS

Printing Using The Optional Document Feeder

Guide to document feeder component


ADF Unit Open Lever
Use to open the ADF unit.
Original Guides
Adjust these guides to position the originals correctly.
Original Tray
Originals used to make masters are delivered to this tray.
ADF Unit
Feeds the original to the master making position.

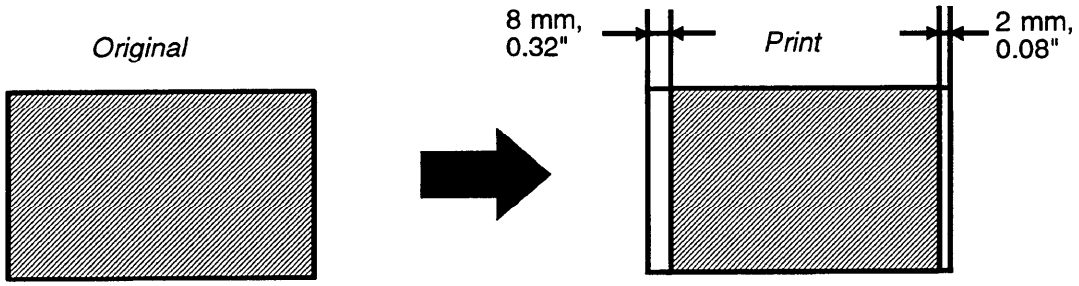
Originals

❒ The following types of originals are not recommended for use with the document feeder. Set the originals on the exposure glass.

- Originals heavier than 127.9 g/m^2, 34 lb
- Originals lighter than 40.7 g/m^2, 10.8 lb
- Carbon coated originals
- Damaged originals
- Originals with glue on them
- Originals with perforated for ring binders
- Book originals
- Originals written with a pencil or ball-point pen
- Originals smaller than 90 mm x 140 mm, 3.6" x 5.6"
- Originals larger than 307 mm x 432 mm, 12.0" x 17.0"
- Folded, curled, creased originals
- Bound, stapled, or clipped originals

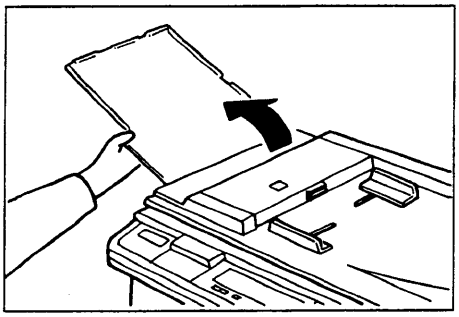
❒ If you use paste-up originals, make sure the pasted parts hold firmly to the base sheet. If the thickness of the paste-up original is more than 0.2 mm, 1/125", a shadow might appear on the prints.

❒ The first 8 mm, 0.32", of the leading edge and the last 2 mm, 0.08", of the trailing edge cannot be printed. Make sure the leading edge margin is at least 8 mm, 0.32", and the trailing edge margin is at least 2 mm, 0.08".

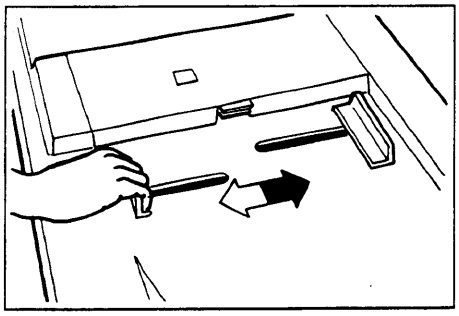


Setting originals into the document feeder

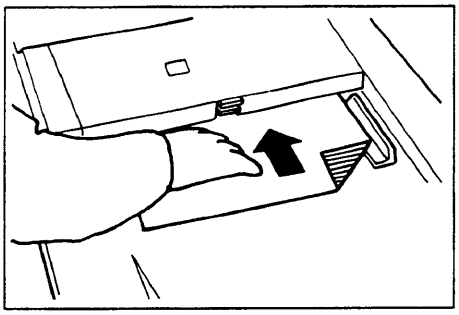
- If you set one original into the document feeder while another original is still on the exposure glass, the original set into the document feeder will be scanned first.



1. Set the original tray.



2. Adjust the original guides to the size of the originals.

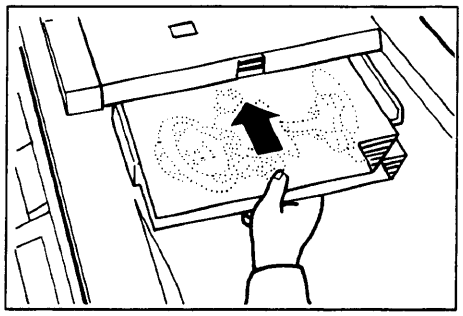


3. Insert the originals face down in the document feeder until it stops.
   - Do not insert different size originals at the same time.
   - Approximately 20 originals can be inserted at one time.
   - The guides must fit snugly against both sides of the stack.

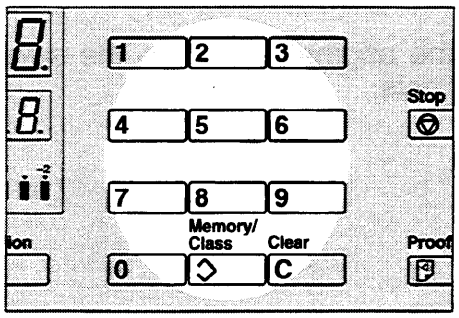
4. Set the required image settings and press the **Master Making** key.
   - If the next original has been set in the document feeder before the machine stops, that original is fed automatically and a trial print is delivered to the paper delivery table after the print of the first original is completed. Check the image position of the trial print of the next original. (See page 16.)

Combine 2 originals with the document feeder

- Refer to page 40 for details about the Combine 2 originals funtion.

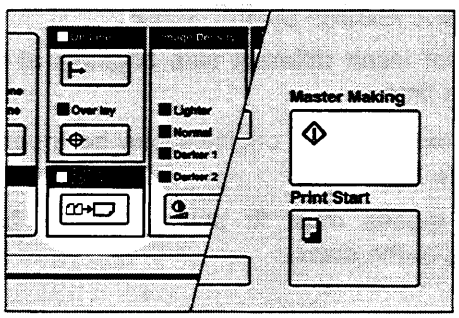


1. Insert the 2 originals face down and with the top toward the operation side.
   - The first original fed will be printed on the leading part of print.



2. Enter the number of prints using the **Number** keys.

3. Check the print paper size and the reproduction ratio.



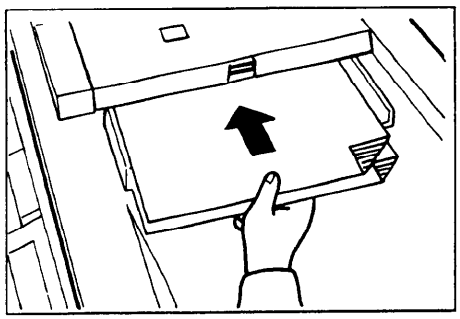
4. Press the **Combine 2 Originals** key.

5. Press the **Master Making** key.
   - After the first original is on the master, the second original is fed.
   - If you set only one original, the beeper sounds after the first original is on the master. Set the second original and press the **Master Making** key.
   - If you set only 2 originals, the Combine 2 Originals mode will be canceled after the second original is on the master.

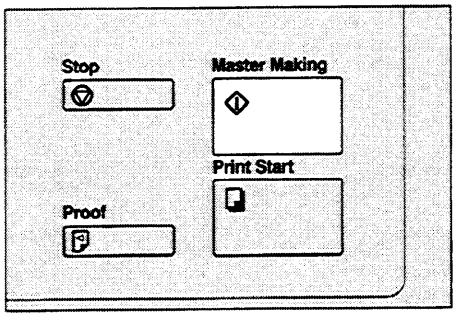
Group printing from different originals with the document feeder (Memory mode)

- To prevent original misfeed, do not set originals of different sizes.
- Do not set more than 15 originals at one time.

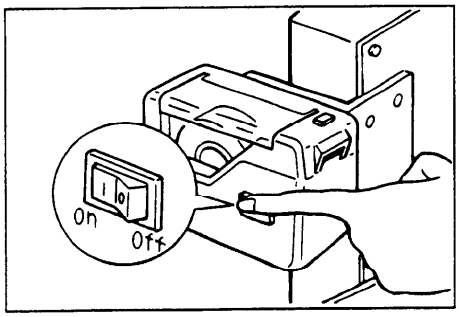
1. Follow steps 1 to 7 of page 37 and 38.



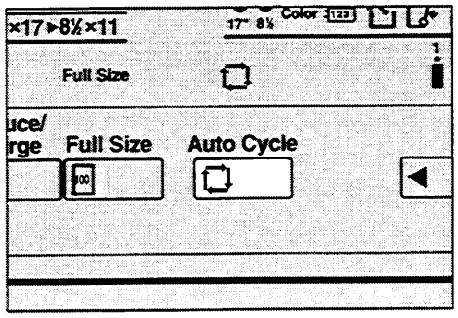
2. Set the originals face down into the document feeder.
   - The originals are fed from the bottom of the stack. Make sure that the originals are set in the correct sequence with the first original on the bottom.



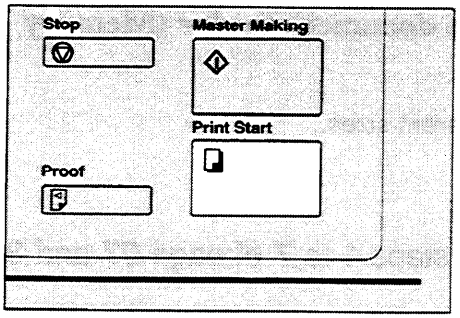
3. Press the **Master Making** key. Check the image position on the trial prints. (See page 16.)



4. Turn on the power switch of the optional tape dispenser.

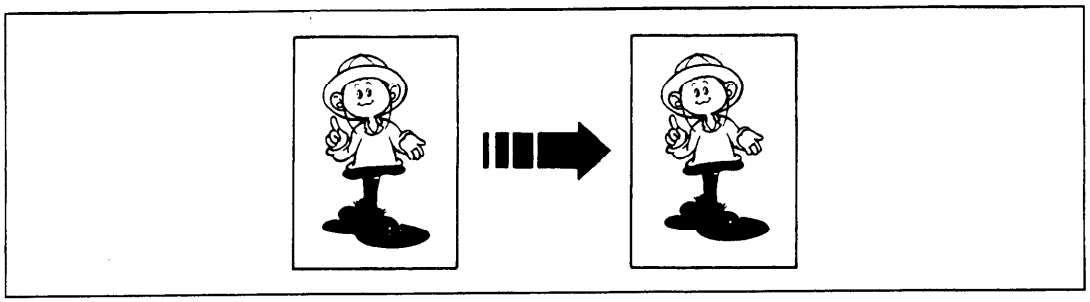


5. Press the **Auto Cycle** key.
   - The Auto Cycle indicator will light.
   - In Auto Cycle mode, printing starts automatically after a trial print is delivered.



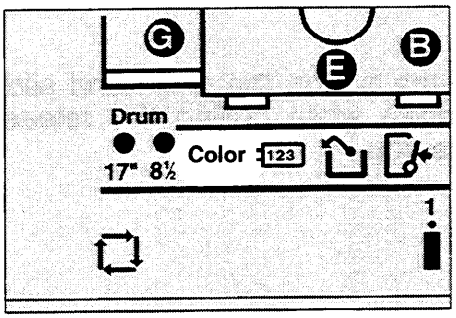
6. Press the **Print Start** key.
   - After the last page of each set is fed out to the paper delivery table, the tape dispenser drops a strip of paper on the top of the paper stack. The next cycle begins.

Color Printing Using The Optional Color Drum



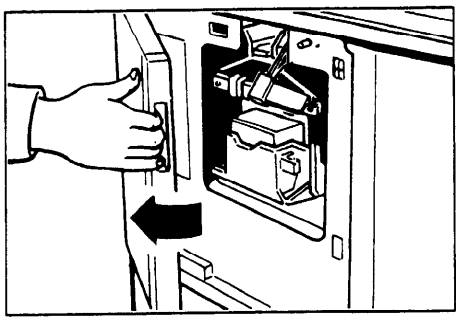
Color drum units (red, blue, green, and brown) are available as options in addition to the standard black unit. For making color prints, a separate drum unit is necessary for each color.

How to make color prints

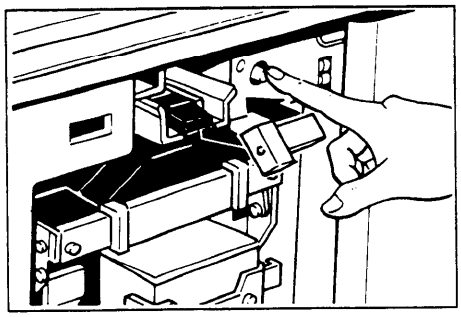


1. Make sure that the Color Print indicator lights.
2. Follow the standard printing procedure. (See page 12.)

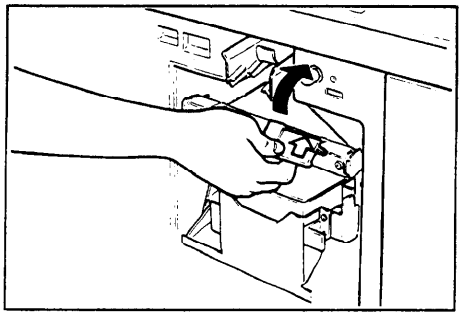
Changing the drum unit for color printing



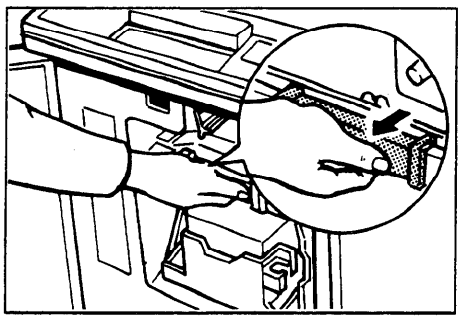
1. Open the front door.



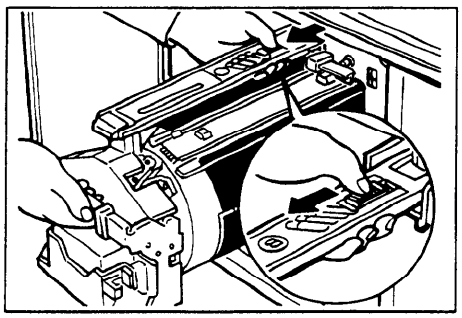
2. Make sure that the lamp of the drum rotation button is green. If this lamp is red, press the drum rotation button until the beeper sounds and the lamp turns green.



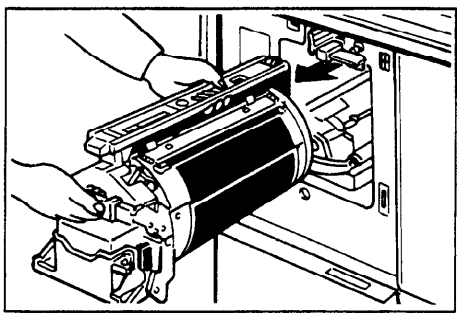
3. Lift the lock lever until it locks in position.



4. Pull out the drum unit handle while pressing the release bar inside the green handle.
   - If you cannot pull out the drum unit even when the lamp of the drum rotation button is green, push the drum unit handle, then pull out the drum unit.

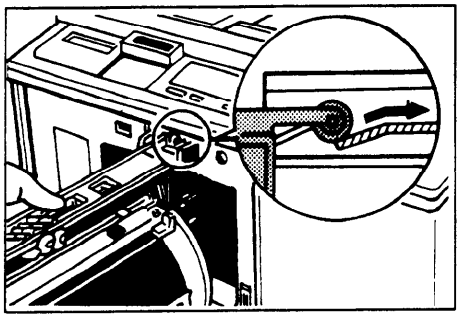


5. Hold the rail on the drum and slide out the drum while pulling the release towards you.

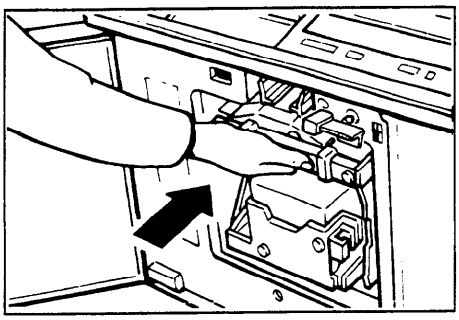


6. Remove the drum unit from the machine while holding the upper drum stay.

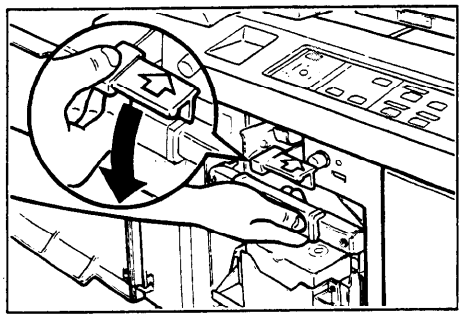
   Caution: Be careful not to let the drum unit fall.



7. Insert the color drum unit along the guide rail.



8. Slide in the drum unit until the drum unit locks in position.



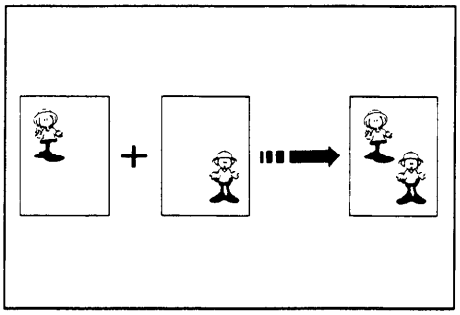
9. Lower the drum unit lock lever.

10. Close the front door.
    - Make sure that the Cover Open indicator turns off, and the Color Drum indicator lights.

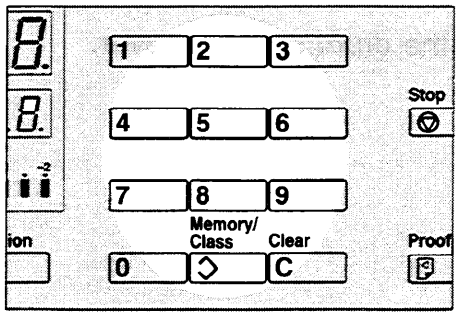
Printing in two colors

After printing in one color, you can print in another color on the same side of the print.

- You cannot print in two colors at one time.
- Leave the prints for a while before printing on them again. This lets the ink dry.

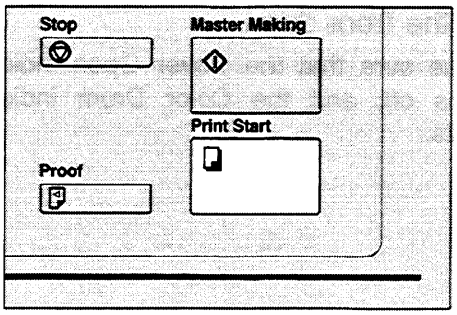


1. Prepare the two originals. Set the first original on the exposure glass.

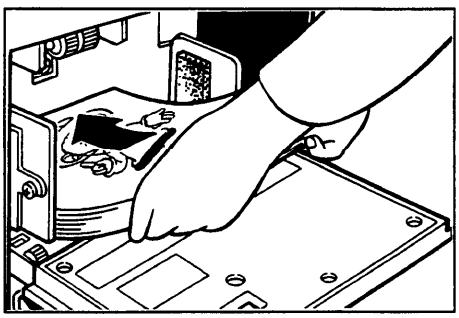


2. Enter the number of prints using the **Number** keys.

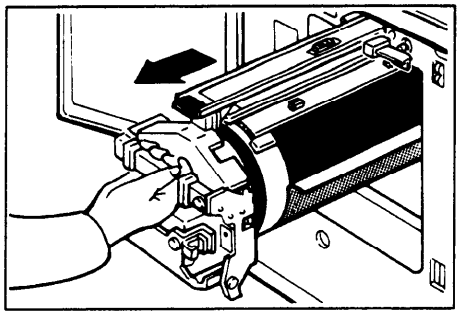
3. Press the **Master Making** key.
   - The original is fed, and the trial print is delivered to the paper delivery table. Check the image position. (See page 16.)



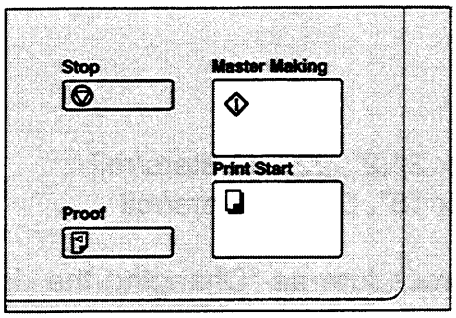
4. Press the **Print Start** key.



5. Remove the prints from the paper delivery table and set them on the paper feed table again as shown in the illustration.



6. Exchange the drum unit. (See page 55.)



7. Set the second original and press the **Master Making** key. Check the image position. (See page 16.)

8. Press the **Print Start** key.

Changing The Drum Size

To save costs on master rolls, you can shorten the length of each master by changing to an optional smaller drum.

Printing area (at 23°C/73°F, 65% RH):

Max. 290 x 412 mm (11.4" x 16.2") with A3 drum
Max. 290 x 204 mm (11.4" x 8.0") with an optional A4 drum

Master cut length:

A3 drum .... 320 mm x 540 mm, 12.5" x 21.2", 225 masters/roll
Optional A4 drum .... 320 mm x 332 mm, 12.5" x 13", 370 masters/roll

❒ To change the drum unit, follow the same procedure as "Changing the drum unit for color printing". (See page 55.)

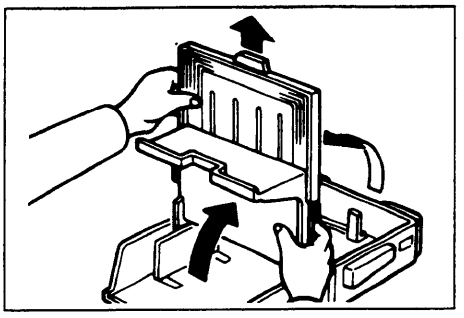
Printing Using The Optional Paper Cassette

❒ The optional paper cassettes are not sold in some areas.

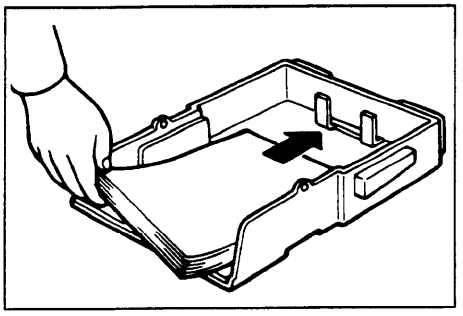
If you always use 2 or more paper sizes, it is easy to change the paper size by using the paper cassette. Set the paper you use most on the paper feed table and set other paper in the cassette. You can use B4, A3, 8 1/2" x 14", or 11" x 17" paper in the A3 cassette, and B5, A4, or 8 1/2" x 11" paper in the A4 cassette.

Replenishing paper

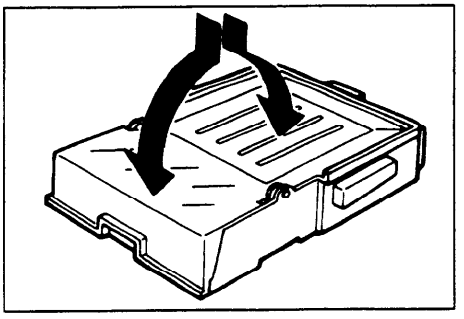
The Load Paper indicator (🖷) lights when the paper cassette runs out of paper.



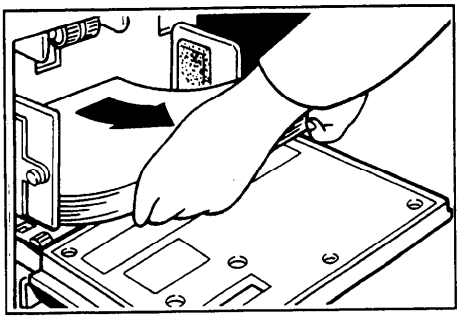
1. To remove the cassette cover, raise both sections of the cover to the vertical position, then pull the cover up and out from its holders.



2. Insert paper into the cassette, taking care to align the sheets.

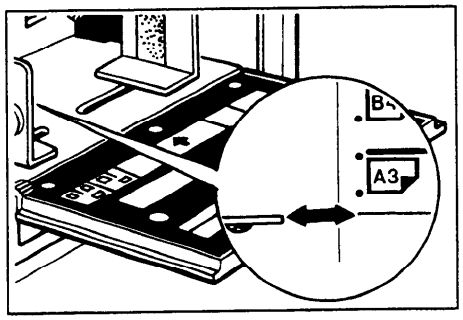


3. To replace the cover, fold both cover sections together and insert the cover as shown into the holders on the sides of the cassette.

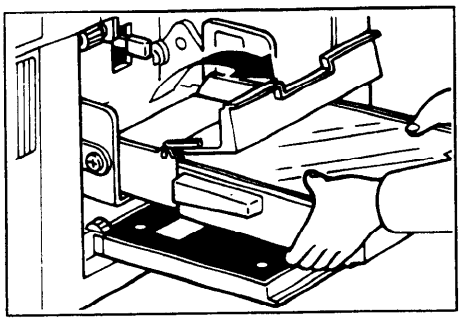


4. Remove the paper from the paper feed table.
   - The paper feed table will lower.

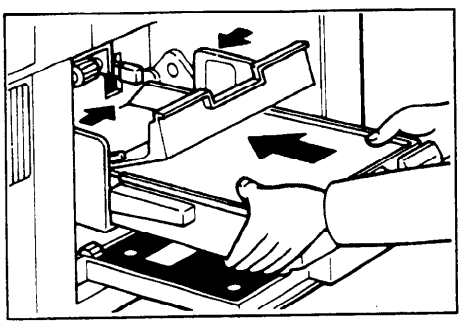
5. Adjust the feed roller pressure lever, separation roller pressure levers and wing guide release lever according to the type of the paper. (See page 28.)



6. Adjust the side plates to the paper cassette size.

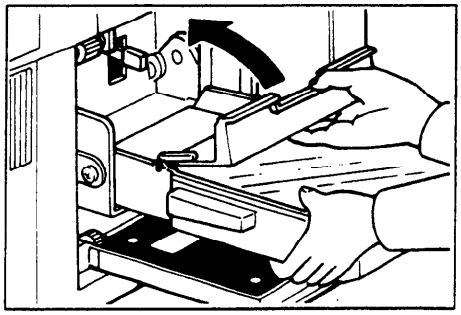


7. Using both hands, insert the cassette in the machine and open the front section of the cover, as shown.



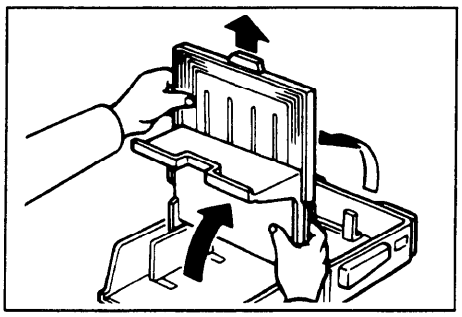
8. Push the cassette forward until it stops. Re-adjust the guide plates to the cassette size.
   - If the side pads are positioned right, move them to the left.

Removing the paper cassette

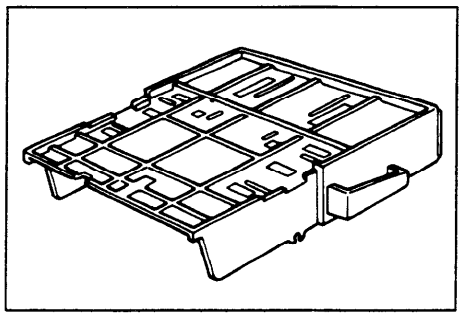


1. Press the **Paper Feed Table Down** key. Pull out the cassette to the middle of the paper feed table and close the cassette cover.
   - To prevent paper from falling out, always keep the cassette cover closed when moving the cassette.

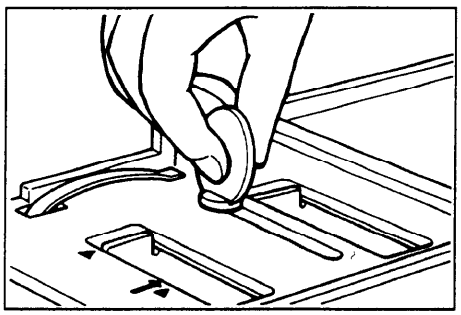
Changing the paper size



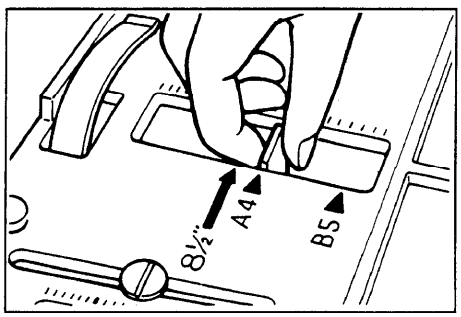
1. To remove the cassette cover, lift both sections to the vertical position and pull the cover up and out from its holders.



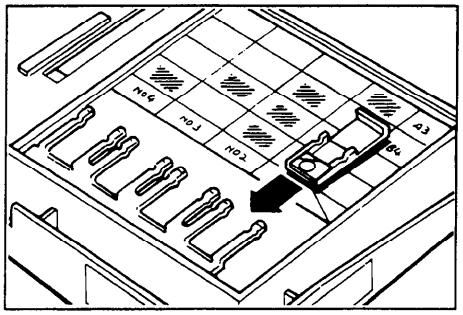
2. Turn the cassette upside down.



3. Loosen the 6 screws fixing the guide plate at the right, left, and rear sides.

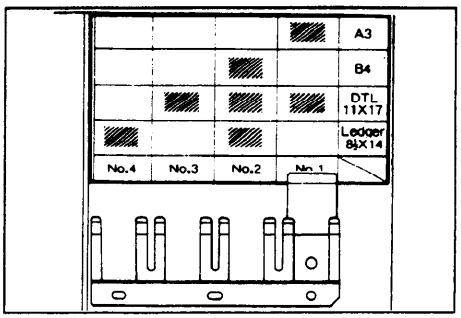


4. Slide the guide plates to the desired position and tighten the screws.



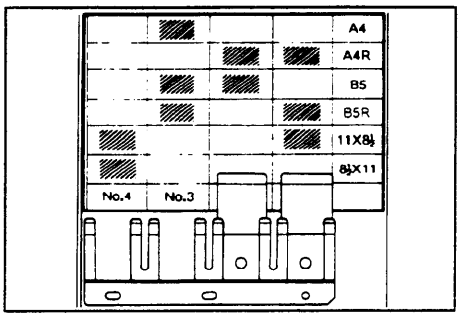
5. Insert the sensor actuator in the slot that corresponds to the cassette setting (refer to the cassette size decal).

A3 size paper cassette



Example: A3 printing

A4 size paper cassette



Example: A4 lengthwise printing

- If only one sensor actuator is required, be careful not to lose the other one.

CHANGING DEFAULT SETTINGS

Printing needs may vary. To suit your application, you can adjust the setting for certain functions. Functions that can be adjusted are as follows:

1. **Minimum print quantity setting (SP # 10)**
   Specifies the minimum number of prints (0 to 9999) that can be input with the **Number** keys.

   Example:
   If you specify 20 as the minimum number of prints,

   runs of 20 or more copies will be accepted,
   runs of less than 20 copies will not be accepted.

2. **Maximum print quantity setting (# 11)**
   Specifies the maximum number of prints (0 to 9999) that can be input with the **Number** keys.

3. **Fixed magnification ratio adjustment (# 12 to # 19)**
   Adjusts any of the 8 fixed magnification ratios. The new fixed magnification ratio is displayed on the guidance display by pressing the **Reduce/Enlarge** key on the control panel.

4. **Beeper ON/OFF setting (# 20)**
   Turns the key beeper on or off.

5. **Optional key counter adjustment (# 21)**
   The key counter (option) usually counts the number of copies made regardless of the number of masters used. For accounting purposes, it is possible for the key counter to be incremented by a value between 0 and 50 whenever a new master is used.

   Example:
   The key counter is adjusted to increase by 20 for each master fed. If 100 copies have been made and the master is replaced, the key counter will increase by 120.

6. **Default mode selection**
Specifies settings to which the machine defaults at power on. This can be done for the following:

Image mode (3 possible settings) — # 40
Image density level (4 possible settings) —# 41
Auto cycle mode (selects or deselects) — # 43
Memory or Class mode (specifies one or the other) — # 44

7. **Make-up mode background pattern selection (# 46)**
This function can be used only when you have the optional Make-up function. Specifies the default make-up mode background pattern that is selected when the **Make-up** key is pressed.

8. **Skip paper feed setting (# 82)**
If you find the back of prints are dirty, you can increase the time between two prints. This gives you the chance to remove prints one by one from the paper delivery table or insert one sheet of paper between two prints. With the default setting, one sheet of paper is fed while the drum rotates once. However, you can change the setting so that one sheet of paper is fed each time the drum rotates two to five times. If you set the drum to rotate two or five times each time one sheet of paper is fed, you can use 590 mm, 23.2", or shorter paper.
The maximum length of paper is 447 mm, 17.5". If you use paper longer than 447 mm, 17.5", completed prints will not be delivered to the paper delivery table properly, so receive them by hands.

9. **Auto Reset mode setting (# 83)**
Sets the auto reset time (3 or 5 minutes). The machine automatically returns to the default settings if no keys are pressed during this time period. This mode can also be turned off.

10. **Auto combine 2 originals mode selection (# 84)**
Select the Combine 2 originals mode as the default setting.

11. **Adding the master compression process at power on (# 85)**
The master is always compressed after it is ejected into the master eject box, in order to get a few more masters in the box. With this function, it takes 6 or 7 seconds for the machine to become ready when you turn on the main switch.

12. **Resettable total counter display/reset**
Displays the total number of masters and copies — # 113
Clears the resettable total counter —# 114

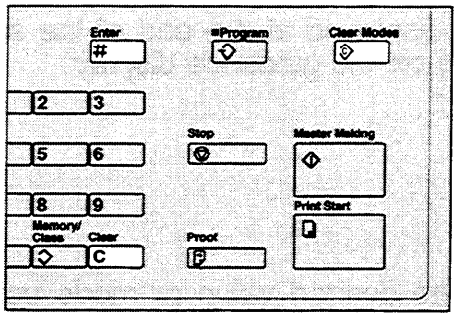
13. Paper size detection selection (# 142)
The machine determines the print area size according to the reproduction ratio and the size of paper set on the paper feed table. If you are making prints on non-standard paper and the original image does not entirely appear on the print, then set paper size detection not work. You can turn width or length detection off separately.

14. Original width detection selection (# 143)
The machine determines the print area size according to the size of the original. If you are making prints using originals of a non-standard size and the image does not entirely appear on the print, then set original detection not work.

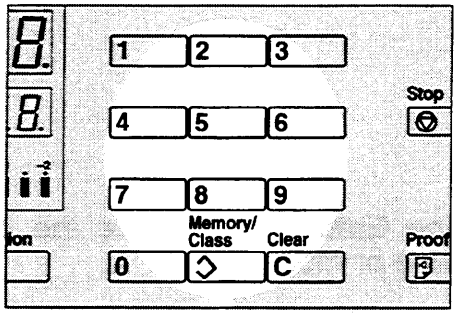
15. Erase margins adjustment area (# 160 to # 170)
Margins erased by pressing the **Margin Erase** key can be adjusted.

How To Access Service Programs

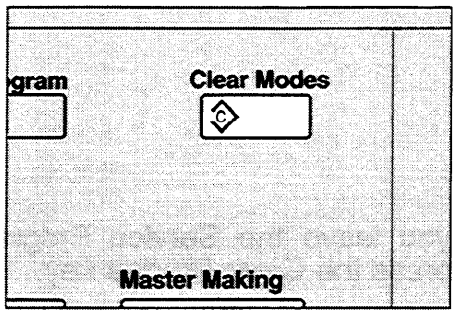
The items described in the previous pages can be set by following this procedure.



1. Press the keys on the operation panel in the following order:
   (1) **Clear Modes** key
   (2) **Clear** key
   (3) **Enter** key.
   - The sp-mode display appears on the guidance display.

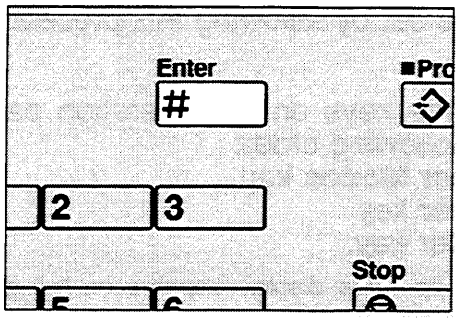


2. Using the **Number** keys, enter the desired service program number (listed in the service program table – see page 71).

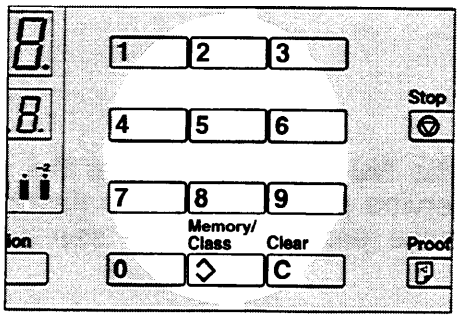


3. When you leave the Service Program mode, press the **Clear Modes** key.

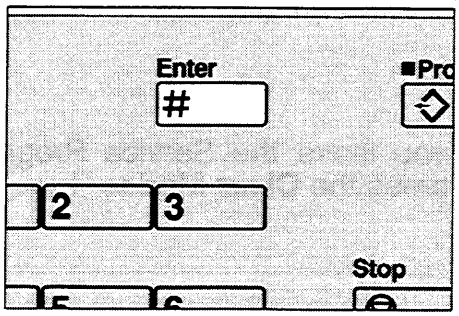
How To Change Adjustment Values Or Modes



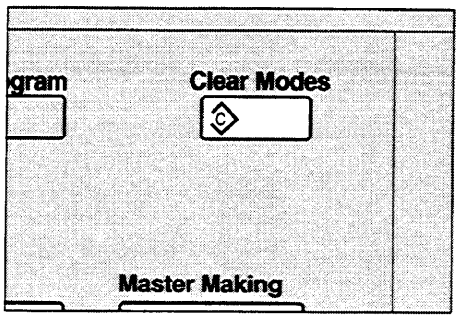
1. After entering the desired service program number, press the **Enter** key. The value or mode set at the factory will be displayed at the end of the second line on the guidance display.



2. Enter the desired value or mode using the **Number** keys.



3. Press the **Enter** key to store the desired value or mode.



4. When you leave the Service Program mode, press the **Clear Modes** key.

Service Program Table

♥: *A4 version* ♦: *8½" x 11" version*

SP No.	Mode	Function	Adjustment Value	Factory Setting	Reference
10.	Minimum Print Quantity	Sets the minimum print quantity that can be entered.	0 to 9999	0	Page 66 - 1
11.	Maximum Print Quantity	Sets the maximum print quantity that can be entered.	0 to 9999	9999	Page 66 - 2
12.	Fixed Magnification Ratio Adjustment	Adjusts a fixed magnification ratio. A4 version: from A4 to A3 8½" x 11" version: from 5½" x 8½" to 8½" x 14"	50 to 200%	♥: 141% ♦: 155%	Page 66 - 3
13.		Adjusts a fixed magnification ratio. A4 version: from A4 to B4 8½" x 11" version: from 8½" x 11" to 11" x 17"	50 to 200%	♥: 122% ♦: 129%	
14.		Adjusts a fixed magnification ratio. A4 version: from B4 to A3 8½" x 11" version: from 8½" x 14" to 11" x 17"	50 to 200%	♥: 115% ♦: 121%	
15.		Adjusts the full size magnification ratio.	50 to 200%	100%	
16.		Adjusts the create margin magnification ratio.	50 to 200%	93%	
17.		Adjusts a fixed magnification ratio. A4 version: from A3 to B4 8½" x 11" version: from 8½" x 14" to 8½" x 11"	50 to 200%	♥: 87% ♦: 77%	

SP No.	Mode	Function	Adjustment Value	Factory Setting	Reference
18.	Fixed Magnification Ratio Adjustment	Adjusts a fixed magnification ratio. A4 version: from B4 to A4 8 1/2" x 11" version: from 11" x 15" to 8 1/2" x 11"	50 to 200%	♥: 82% ♦: 74%	Page 66 - 3
19.		Adjusts a fixed magnification ratio. A4 version: from A3 to A4 8 1/2" x 11" version: from 11" x 17" to 8 1/2" x 11"	50 to 200%	♥: 71% ♦: 65%	
20.	Beeper	Turns the beeper ON or OFF.	0: No 1: Yes	0	Page 66 - 4
21.	Prints/Master Cost	Adjusts the ratio of masters to prints for accounting purposes.	0 to 50	0	Page 66 - 5
40.	Image Mode Default Setting	Specifies the image mode at power on.	0: Photo 1: Line 2: Sharpen	1	Page 67 - 6
41.	Image Density Default Setting	Specifies the image density at power on.	0: Light 1: Standard 2: Dark 3: Darker	1	Page 67 - 6
43.	Auto Cycle Mode Default	Specifies whether Auto Cycle mode is selected at power on.	0: No 1: Yes	0	Page 67 - 6
44.	Memory/Class Mode Default Setting	Specifies Memory or Class mode at power on.	0: Class 1: Memory	1	Page 67 - 6
46.	Make-Up Background Pattern Default Setting	Specifies which make-up background pattern is selected when the **Make-Up** key is pressed.	1 to 40 51 to 90 101 to 140 150 to 190 0: No background pattern	0	Page 67 - 7
82.	Skip Feed Interval	Selects the feed interval.	1: Normal 1 sheet fed every 1 to 5 drum rotations	1	Page 67 - 8
83.	Auto Reset Time	Specifies the auto reset time.	0: No 1: 3 min. 2: 5 min.	0	Page 67 - 9
84.	Auto Combine 2	Selects the auto combine mode.	0: No 1: Yes	0	Page 67 - 10
85.	Adding the master compression	Sets the used masters to be compressed at power on.	0: No. 1: Yes	0	Page 67 - 11
113.	Resettable Total Master/ Copy Counter	Used to display the total number of masters and copies. (This counter can be reset.)		0	Page 67 - 12

SP No.	Mode	Function	Adjustment Value	Factory Setting	Reference
114.	Clear Resettable Total Master/Copy Counter	Clears the resettable total master/copy counter.	0: No 1: Yes	0	Page 67 - 1
120.	User Code Mode	Selects user code mode.	0: No 1: Yes	0	Page 75
121.	User Code Count	Displays the number of masters and copies made in each user code.		0	Page 78
122.	Clear User Code Count	Clear each user code counter.	0: No 1: Yes	0	Page 79
123.	Total User Code Count	Displays the total number of masters and copies for all the 20 user codes.		0	Page 80
124.	Clear Total User Code Count	Clears the total user code counter.	0: No 1: Yes	0	Page 81
142.	Paper Size Detection	Selects paper size detection.	0: Yes 1: Width detection 2: Length detection 3: No detection	0	Page 68 - 1
143.	Original Size Detection	Specifies whether original size detection is done.	0: No 1: Yes	1	Page 68 - 1

SP No.	Mode	Function	Adjustment Value	Factory Setting	Reference
160.	Erase Margins Adjustment Area	Adjust the erase center and edges area for an A3, 11" x 17" original.	(50 ~ 307 mm) x (50 ~ 432 mm)	♥:289 x 416 ♦:271 x 428	Page 68 - 14
161.		Adjust the erase center and edges area for a B4, 8 1/2" x 14" original.		♥:249 x 360 ♦:208 x 352	
162.		Adjust the erase center and edges area for an A4 lengthwise, 8 1/2" x 11" lengthwise original.		♥:202 x 293 ♦:208 x 275	
163.		Adjust the erase center and edges area for an A4, 8 1/2" x 11" original.		♥:289 x 206 ♦:271 x 212	
164.		Adjust the erase center and edges area for a B5 lengthwise, 5 1/2"x 8 1/2" lengthwise original.		♥:174 x 253 ♦:132 x 212	
165.		Adjust the erase center and edges area for a B5, 5 1/2" x 8 1/2" original.		♥:249 x 178 ♦:208 x 136	
166.		Adjust the erase center and edges area for an A5 lengthwise original.		♥:140 x 206 ♦:50 x 50	
167.		Adjust the erase center and edges area for an A5 original.		♥:202 x 144 ♦:50 x 50	
168.		Adjust the erase center and edges area for an A6 lengthwise original.		♥:97 x 144 ♦:50 x 50	
169.		Adjust the erase center and edges area for an A6 original.		♥:140 x 101 ♦:50 x 50	
170.		Adjust the erase center and edges area for a smaller than A6 original.		♥:92 x 144 ♦:50 x 50	

User Code

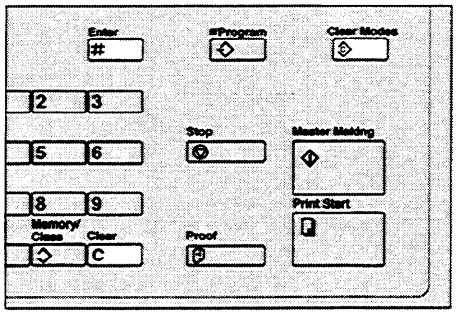
With the user code function, operators must input an authorized code before the machine will operate. The machine keeps track of the number of prints made under each code. In this mode, the following 20 user codes (fixed) can be used to access the machine:

382, 191, 182, 173, 164, 155, 146, 137, 128, 119,
482, 291, 282, 273, 264, 255, 246, 237, 228, 219

❒ To prevent unauthorized users from accessing the machine, note down these codes and then black out the codes from this manual.

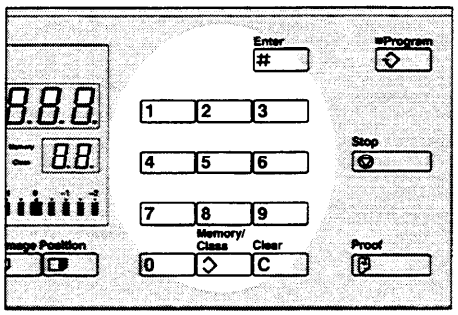
How to enable user code mode (# 120)

The following procedure explains how to enable user code mode. This must be done before a user code can be input.

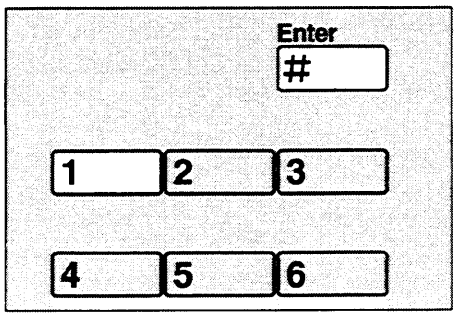


1. Press the keys in the following order:

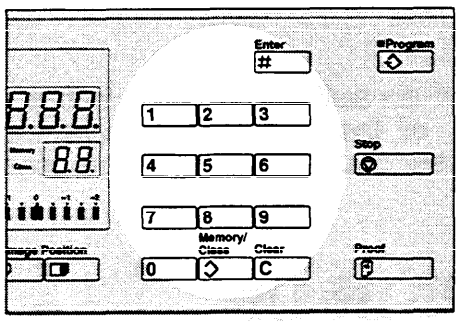
   (1) **Clear Modes** key
   (2) **Clear** key
   (3) **Enter** key.



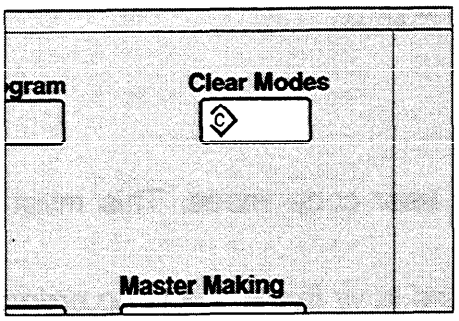
2. Enter "120" using the **Number** keys and press the **Enter** key.



3. Enter "1" (Yes) using the **Number** keys and press the **Enter** key.

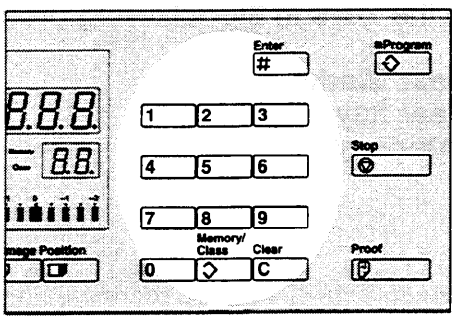


4. Specify the Auto Reset time.
Enter "1" (3 minutes) or "2" (5 minutes) using the **Number** keys and press the **Enter** key.



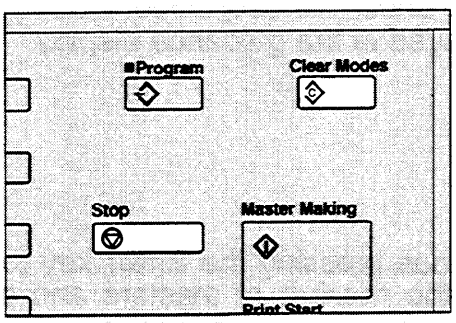
5. Press the **Clear Modes** key to leave Service Program mode.

How to use user code mode



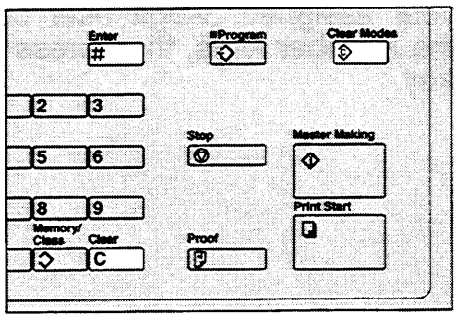
1. Input your assigned 3-digit user code using the **Number** keys, then press the **Enter** key.

2. Make your prints.



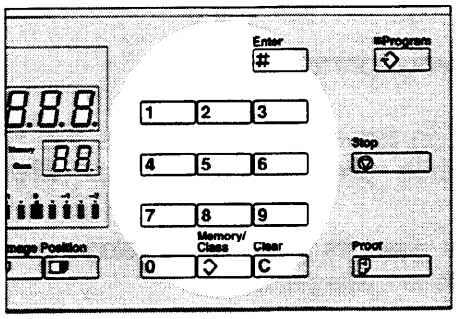
3. After you have finished, press the **Stop** key while pressing the **Clear Modes** key.
   - This prevents others from using your user code to make prints.
   - If you do not follow this step, the machine will returns to the condition that you should input your user code before making prints after auto reset time.

How to check the user code counter (# 121)

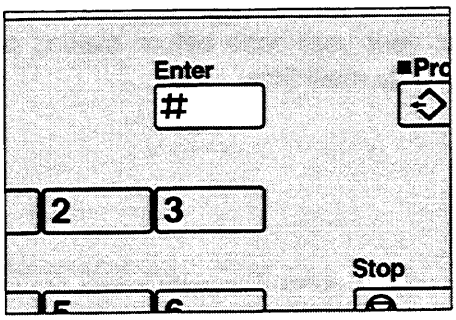


1. Press the keys in the following order:

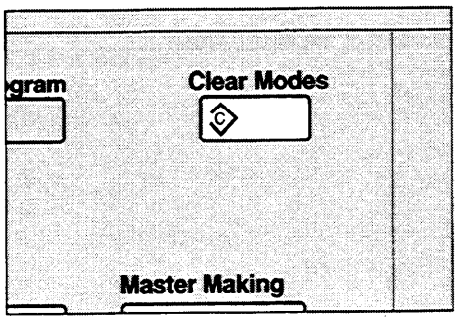
   (1) **Clear Modes** key
   (2) **Clear** key
   (3) **Enter** key.



2. Enter "121" using the **Number** keys and press the **Enter** key.
   The number of masters and prints made under the user code "382" will be displayed in the guidance display.



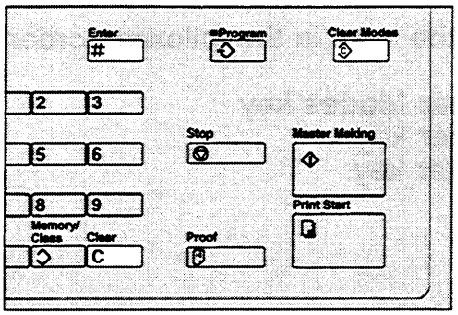
3. Continue pressing the **Enter** key to display the number of masters and prints made under your user codes.



4. Press the **Clear Modes** key to leave Service Program mode.

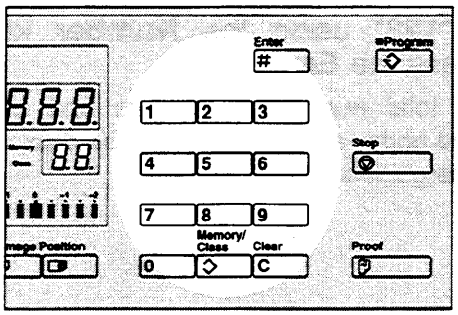
How to clear the user code counter (# 122)

- If you want to clear every user code counter, see page 81.

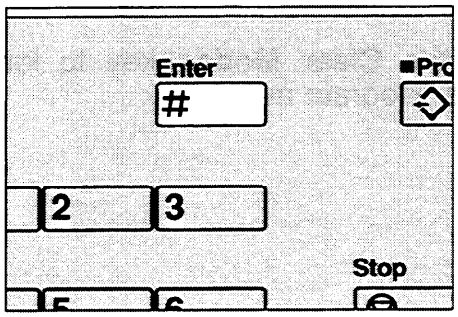


1. Press the keys in the following order:

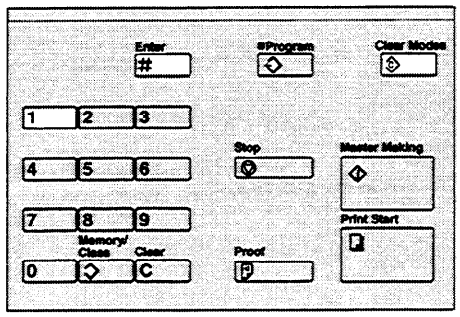
   (1) **Clear Modes** key
   (2) **Clear** key
   (3) **Enter** key.



2. Enter "122" using the **Number** keys and press the **Enter** key.



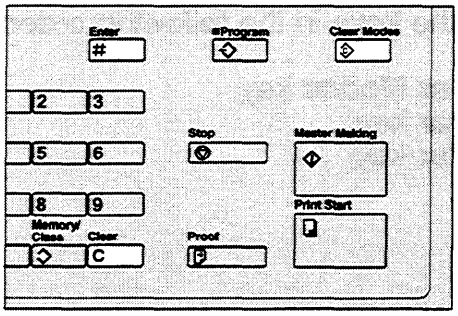
3. Keep pressing the **Enter** key until the desired user code is displayed.



4. Enter "1" using the **Number** keys and press the **Enter** key.

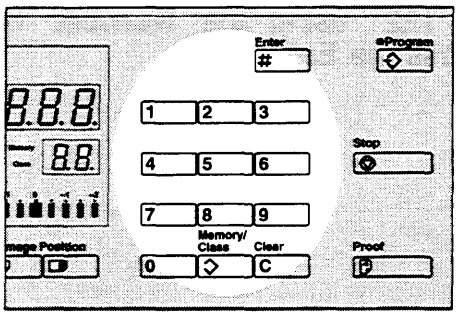
5. Press the **Clear Modes** key to leave Service Program mode.

How to check the total number of masters and prints made under all user codes (# 123)

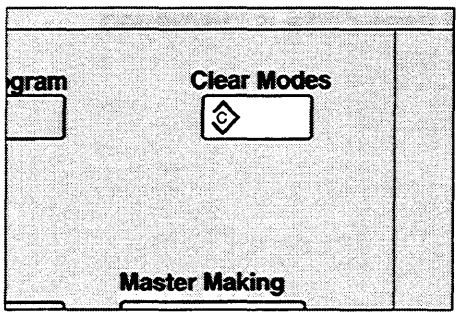


1. Press the keys in the following order:

   (1) **Clear Modes** key
   (2) **Clear** key
   (3) **Enter** key.

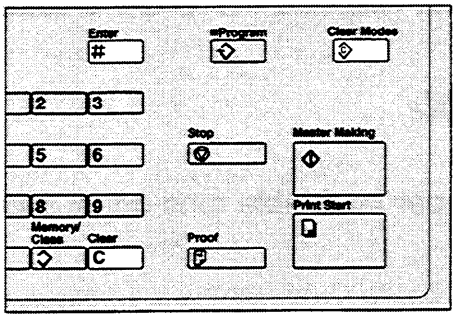


2. Enter "123" using the **Number** keys and press the **Enter** key.
   - The total number of masters and prints made under all user codes will be displayed in the guidance display.



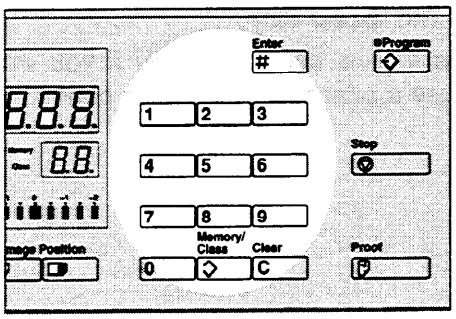
3. Press the **Clear Modes** key to leave Service Program mode.

How to clear the user code total counter (# 124)

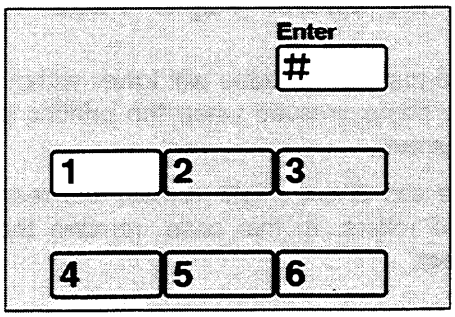


1. Press the keys in the following order:

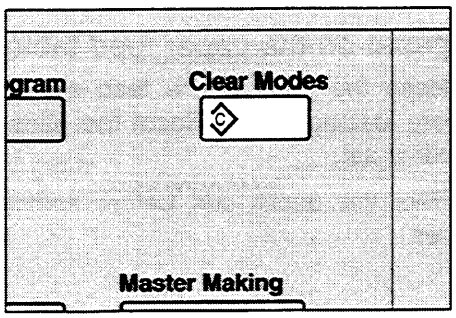
   (1) **Clear Modes** key
   (2) **Clear** key
   (3) **Enter** key.



2. Enter "124" using the **Number** keys and press the **Enter** key.



3. Enter "1" using the **Number** keys and press the **Enter** key.



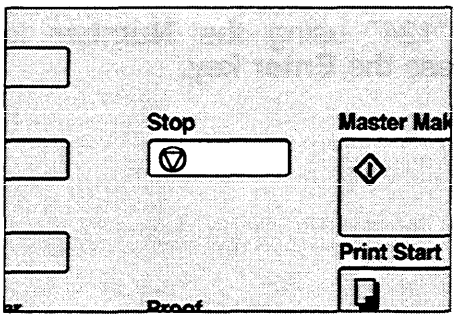
4. Press the **Clear Modes** key to leave Service Program mode.

REPLENISHING SUPPLIES

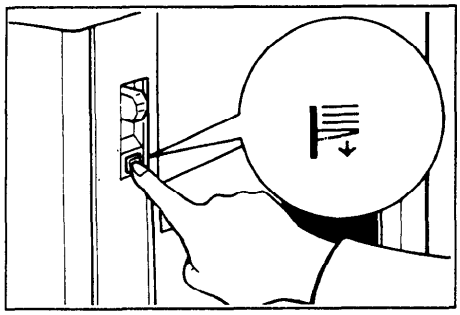
Loading Paper On The Paper Feed Table

The Load Paper indicator (🖷) lights when the paper feed table runs out of paper.

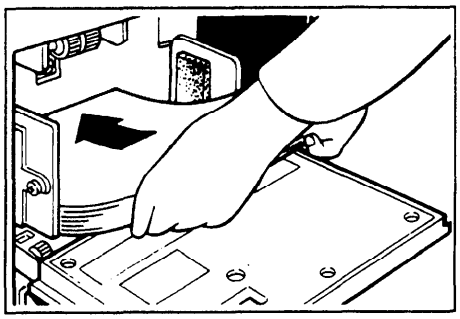
Replenishing paper



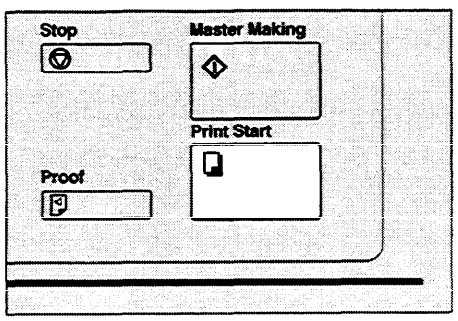
1. Press the **Stop** key.
   - This step is necessary only if you want to pause a print run to replenish paper.



2. Press the **Lower Paper Feed Table** key.
   - The paper feed table will lower without the key being pressed when the printing paper runs out.
   - The top sheet might remain between the feed rollers. In this case, remove the top sheet.

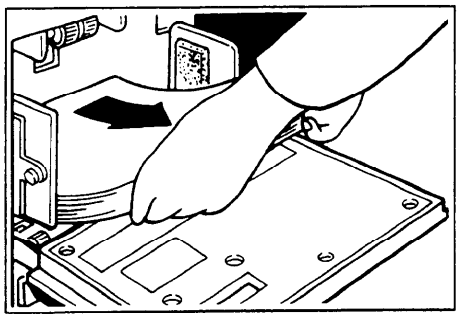


3. Load paper on the paper feed table.
   - Release the pads of the feed side plates before loading paper. Reset the pads after paper is set.
   - Correct the paper curl before setting the paper.

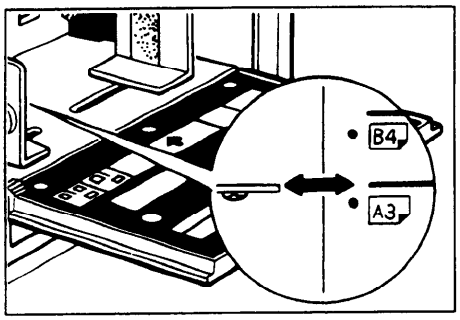


4. Press the **Print Start** key to resume printing.

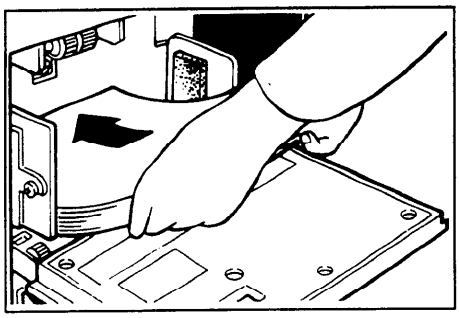
Changing the paper size



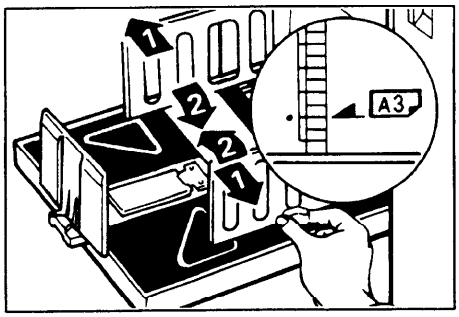
1. Remove the paper from the paper feed table.
   - The paper feed tray will lower.



2. Adjust the paper feed side plates to match the paper size.



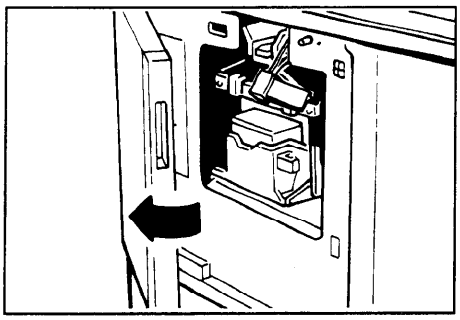
3. Place the paper on the paper feed table.
   - Correct any paper curl before setting the paper.
   - Make sure that the side plates contact the paper lightly.



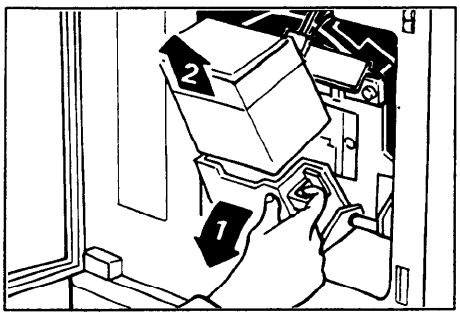
4. Adjust the side plates and the end plate and if necessary, the small size end plate at paper delivery.
   - Make sure that the wing guide release lever positions correctly to match the paper size.

Supplying Ink

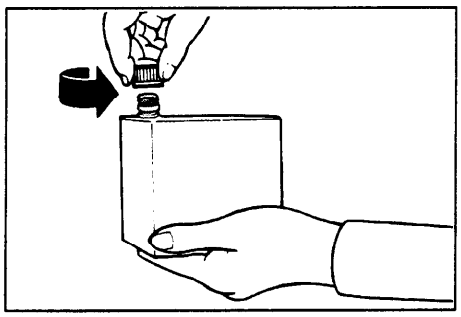
The Add Ink indicator (🖋) lights when it is time to supply ink.



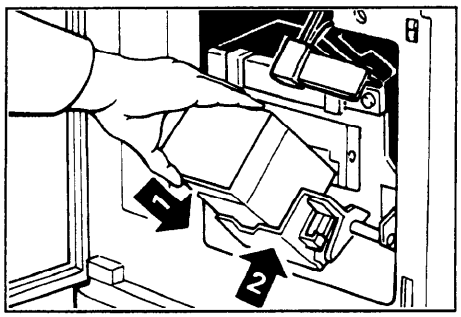
1. Open the front door.



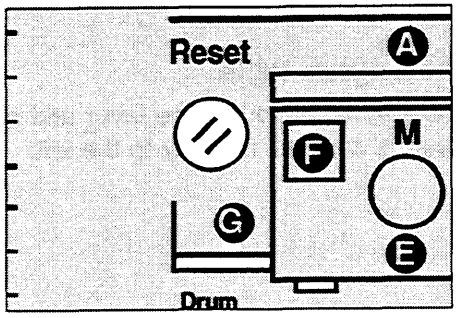
2. Lower the ink holder and remove the used ink cartridge.



3. Remove the cap of the new ink cartridge.

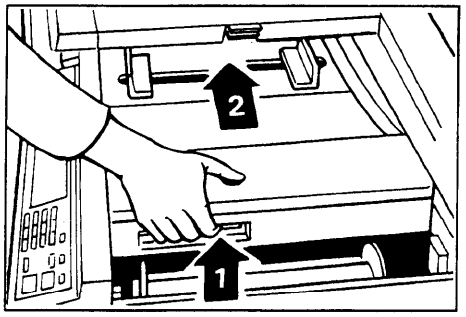


4. Insert the new cartridge into the ink holder. Return the ink holder to its original position until it clicks.
   - Always supply ink of the same color.

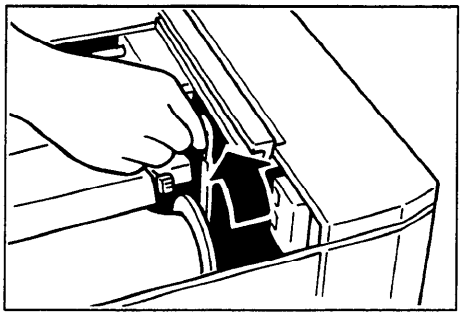


5. Close the front door.
6. Press the **Reset** key.
   - The machine will start idling to supply ink to the drum. It will then stop when the correct amount of ink reaches the drum.

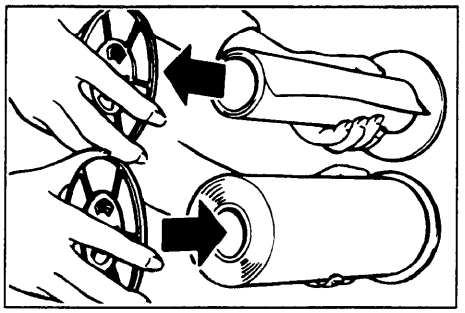
Master Roll Replacement



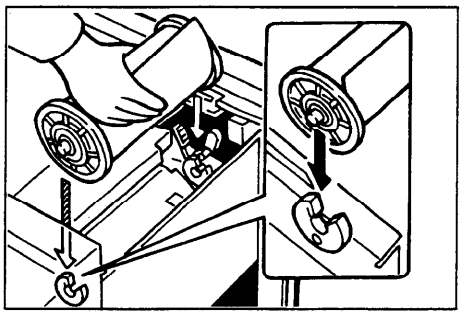
1. Open the original table.
   - Lift the original table release lever and slide the original table all the way to the left.



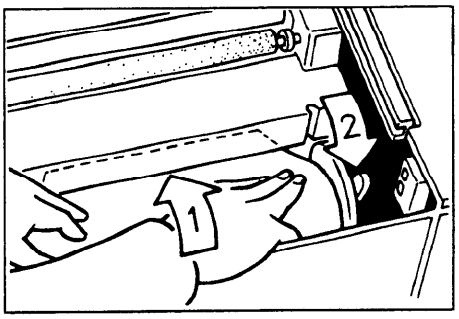
2. Lift the pressure release lever in the direction of the arrow to release the feed roller pressure.



3. Remove the used master roll and pull out both spools. Then, insert both spools into a new master roll.
   - When the Master End indicator lights, it is necessary to replace the master roll even if some master remains on the old roll.

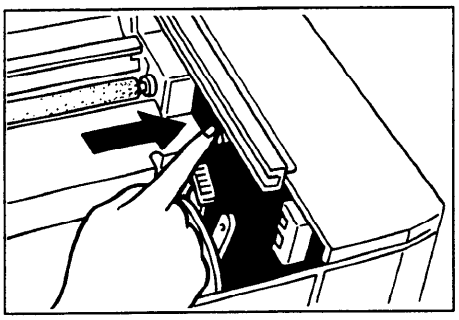


4. The new master roll must be positioned as shown in the illustration.

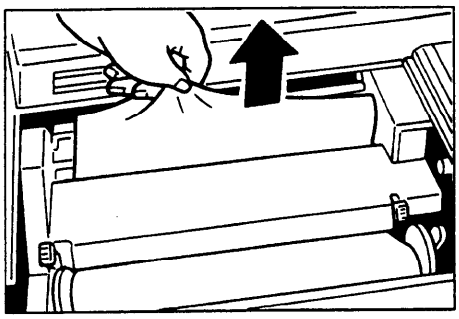


5. Insert the master from its roll under the arrow mark (1) until the leading edge comes out the other side of the steel cover.

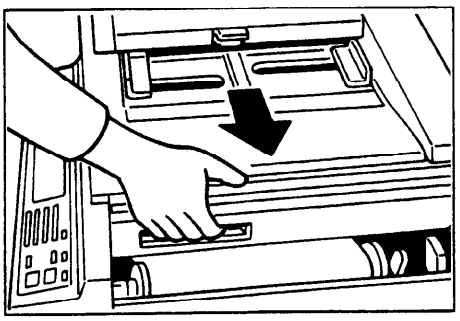
6. Return the pressure release lever to its original position.(2)
   - Rotate the spools backward to take up any slack in the master.



7. Press the master cut button to cut the leading edge of the master roll.



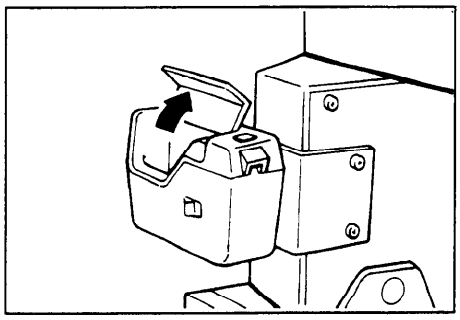
8. After the beeper sounds, remove the cut-off portion of the master roll.
   - Remove the cut-off master completely to prevent master misfeed.



9. Return the original table to its original position.

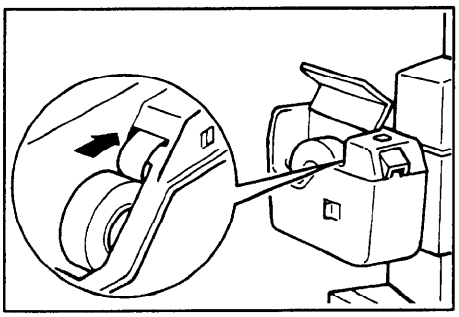
Placing A New Roll Of Tape In The Tape Dispenser (Option)

❒ Make sure that the main switch is turned on and the tape power switch is off.

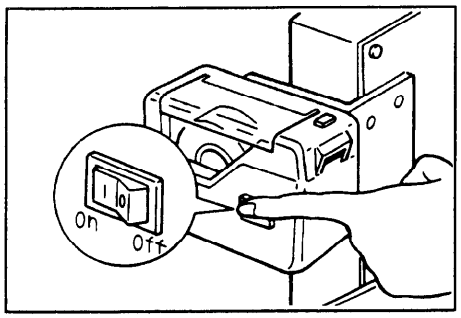


1. Open the cover of the tape dispenser.

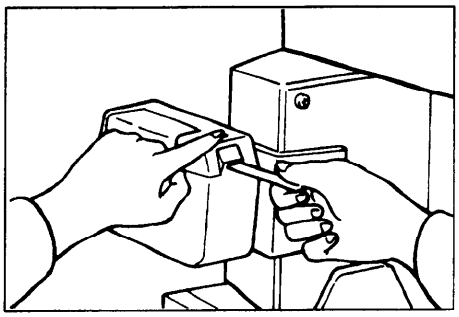
2. As shown, put the roll in the dispenser.
   - Make sure that the tape is installed in the proper direction. If it is not in the correct direction, the tape dispenser will not work correctly.



3. Feed the leading edge of the roll in the dispensing slot until it stops.
   - Push the tape as far as possible through the slot.



4. Turn on the power switch of the tape dispenser.

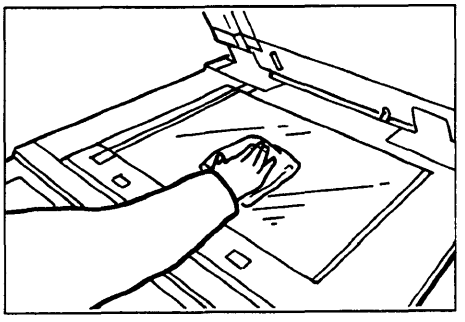


5. Press the manual cut button to trim off the leading edge of the tape.

DAILY MAINTENANCE

To maintain high print quality, clean the following parts and units regularly.

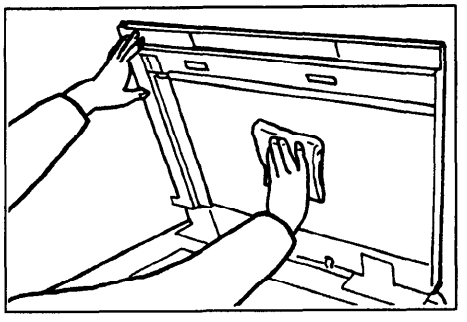
Exposure Glass



Clean the exposure glass with a damp cloth and wipe it with a dry cloth.

- If you do not clean the exposure glass, marks on the glass will be printed.

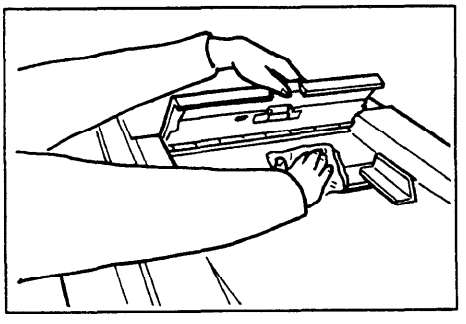
Platen Cover



Clean the platen cover with a damp cloth and wipe it with a dry cloth.

- If you do not clean the platen cover, marks on the cover will be printed.

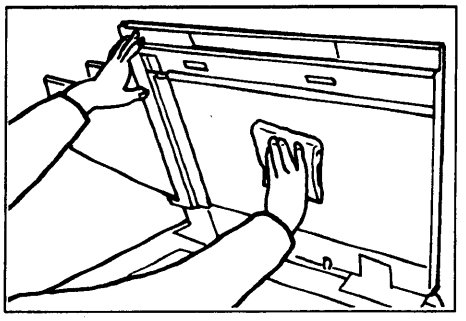
Separation Roller (Optional Document Feeder)



Clean the separation roller with a damp cloth and wipe it with a dry cloth.

- If you do not clean the separation roller, original misfeeds tend to occur.

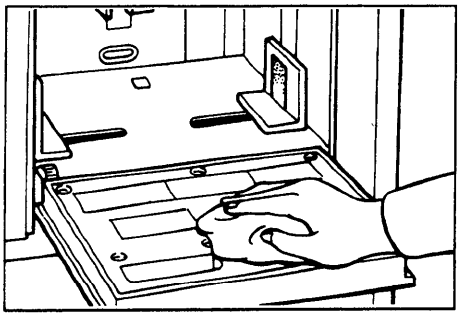
Sheet (Optional Document Feeder)



Clean the sheet with a damp cloth and wipe it with a dry cloth.

- If you do not clean the sheet, marks on the sheet will be printed.

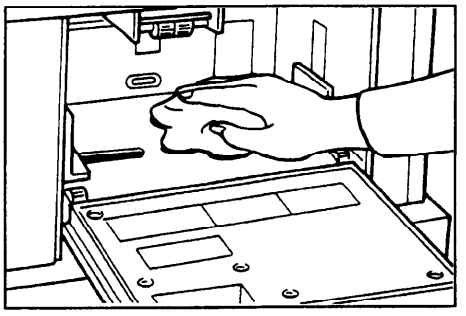
Paper Size Detection Sensors (Paper Feed Table)



Wipe off the paper dust on the paper size detection sensors with a dry cloth.

- If you do not clean the paper size detection sensors, parts of the image will not be printed.

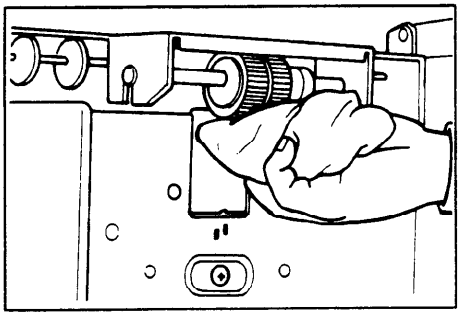
Paper End Sensor (Paper Feed Table)



Wipe off the paper dust on the paper end sensor with a dry cloth.

- If you do not clean the paper end sensor, the Load Paper indicator might not light when paper runs out.

Paper Feed Roller (Paper Feed Table)



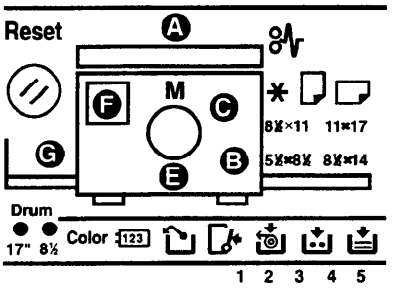
Wipe off the paper dust on the paper feed roller with a damp cloth, then wipe it with a dry cloth.

- If you do not clean the paper feed roller, paper misfeeds tend to occur.

TROUBLESHOOTING

If a malfunction or a misfeed occurs within the machine, the following indicators will blink or light and troubleshooting information will be displayed on the guidance display.

Monitors



When the misfeed indicator (⚠) blinks

Monitor	*Guidance Display*	*Page*
⚠+ A	ORIGINAL JAM REMOVE ORIGINAL	97
⚠+ B	PAPER FEED JAM REMOVE JAMMED PAPER	99
⚠+ C	MASTER FEED JAM REMOVE JAMMED MASTER	101
⚠+ E	PAPER WRAP JAM REMOVE JAMMED PAPER	102
⚠+ E + B	PAPER WRAP JAM REMOVE JAMMED PAPER	104
⚠+ F	MASTER EJECT JAM REMOVE JAMMED MASTER	106
⚠+ G	DELIVERY JAM REMOVE JAMMED PAPER	108

Warning:

- ***Be careful not to cut yourself on any sharp edge when you reach inside the machine to remove misfed sheets of paper or masters.***

Caution:

- Remaining bits of misfed paper or masters will cause more misfeeds and may eventually cause a serious failure. If you tear the paper when removing it, make sure to remove all the torn pieces.

When the open cover/unit indicator ( ) blinks

Monitor	Guidance Display	Page
	CLOSE THE COVER	109
	CLOSE THE ADF COVER	109
	OPEN THE PAPER FEED TABLE	110
	SET THE DRUM COMPLETELY	110
	OPEN THE PAPER DELIVERY TABLE	110

When the supply/exchange indicators blinks

Monitor	Guidance Display	Page
	LOAD MORE PAPER	111
	LOAD NEW INK CARTRIDGE	111
	LOAD NEW MASTER ROLL	111
	EMPTY MASTER EJECT BOX	111
	SET THE MASTER EJECT BOX	111

When other indicators blink

Monitor	Guidance Display	Page
M	MASTER NOT WRAPPED	113
123	SET THE KEY COUNTER	113
Color		113

When one of the following messages is displayed on the guidance display

Guidance Display	
CHECK THE PAPER SIZE PRESS MASTER KEY	You can resume your operation, but the entire image might not appear completely (paper size too small). Change the paper size to match the print area.
RE-ENTER COPY NUMBER MAXIMUM IS XXXX	The maximum number of prints that can be entered is specified by the Service Program mode. Change the number of prints.
RE-ENTER COPY NUMBER MINIMUM IS XXXX	The minimum number of prints that can be entered is specified by the Service Program mode. Change the number of prints.
200% MAXIMUM ENLARGEMENT	The maximum enlargement ratio that can be entered is 200%. If the entered reproduction ratio is over 200%, 200% will be selected.
50% MINIMUM REDUCTION	The minimum reduction ratio that can be entered is 50%. If the entered reduction ratio is under 50%, 50% will be selected.
SET COMMAND SHEETS SET THE ORIGINALS	Make prints after you confirm whether there is an original or a command sheet on the exposure glass.
ORIGINAL IN ADF CLOSE PLATEN COVER	Lower the platen cover completely or remove originals used previously from the document feeder before making the master.
INPUT YOUR ID CODE	User Code mode is set. Before printing, enter your user code.

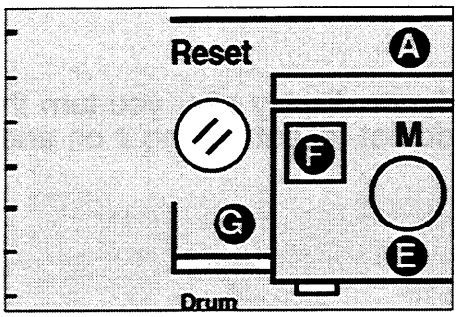
When a service code (E-XX) is displayed in the counter

Turn the main switch off and on. If a service code appears again, contact your service representative.

Caution: If a service code appears on the guidance display after you turn the main switch off and on a few times, do not repeat turning it on and off. Leave the machine off.

When The Misfeed Indicator (⚠) Blinks

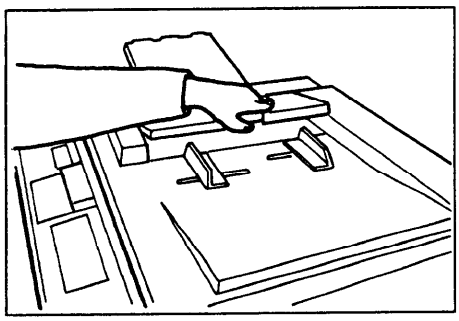
After clearing misfeeds



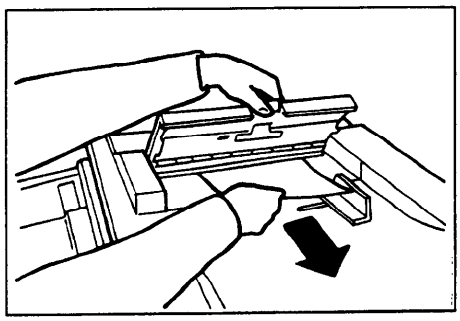
Press the **Reset** key to reset error indicators.

- Do not turn off the main switch when removing misfeeds.

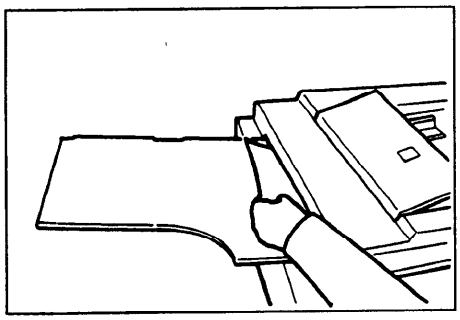
"⚠+ A" Original misfeed occurs when using the optional document feeder



1. Press the ADF unit open lever and open the ADF unit.



2. Pull out the original or the command sheet gently.



3. If you cannot remove the misfed original, pull out the original from the side of original delivery or open the original table and remove the original.

4. Close the ADF unit until it locks in position.

To prevent original misfeeds:

❒ Set the following kinds of originals on the exposure glass.

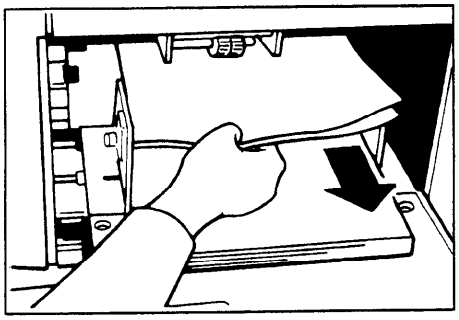
- Originals heavier than 127.9 g/m^2, 34 lb
- Originals lighter than 40.7 g/m^2, 10.8 lb
- Carbon coated originals
- Damaged originals
- Originals with glue on them
- Originals perforated for ring binders
- Folded, curled, or creased originals
- Bound, stapled, or clipped originals
- Originals larger than 307 mm x 432 mm, 12.0" x 17.0"
- Originals smaller than 90 mm x 140 mm, 3.6" x 5.6"

❒ Do not mix deferent sizes of originals in the document feeder.

❒ Clean the separation roller if it is dirty. (A dirty separation roller may slip and cause original misfeeds.)

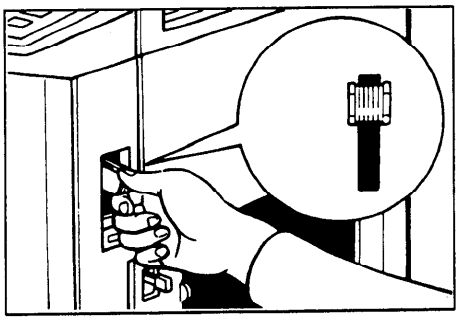
❒ Remove staples or clips of originals. Fan originals that have had staples or clips removed.

"⚠+ B" Paper misfeed in paper feed section

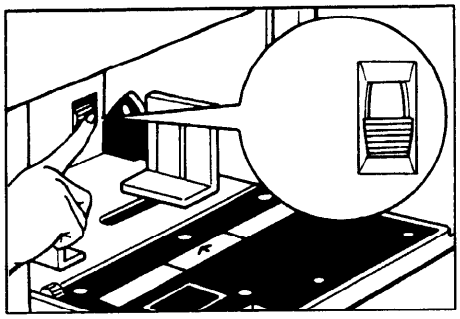


1. Remove the misfed paper.

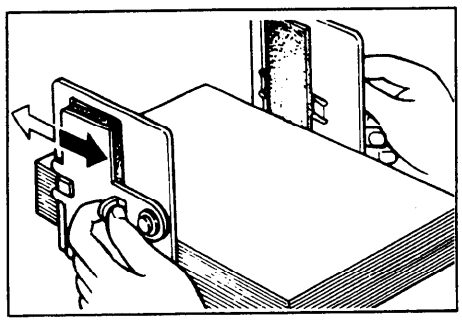
Check the following adjustments before restarting the printing run.



1. Is the paper feed pressure properly adjusted?
   - The standard position of the pressure lever is up. If you print on thick paper (127.9 to 209.3 g/m^2, 34.0 to 55.6 lb), push the lever down .

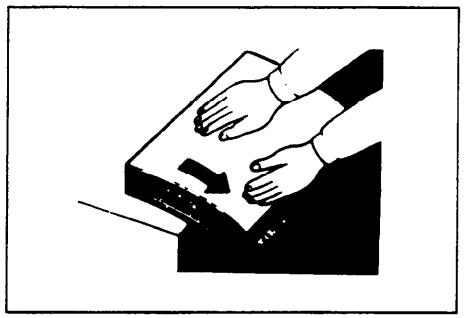


2. Is the separation roller pressure properly adjusted?
   - The standard position of the separation pressure levers is the lower position. If dog-eared or wrinkled prints are delivered, push the levers up.

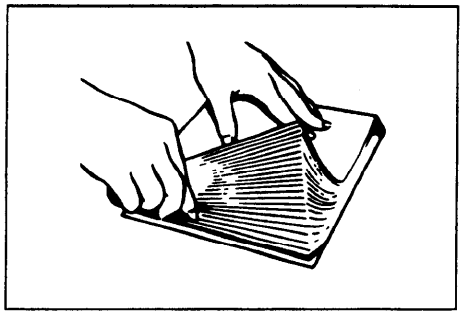


3. Are the side plate pads in the correct positions?
   - To print on thin paper (47.1 to 52.3 g/m^2, 12.5 to 13.9 lb), slide the levers (behind the paper feed side plates) in the direction of the white arrow (see illustration).

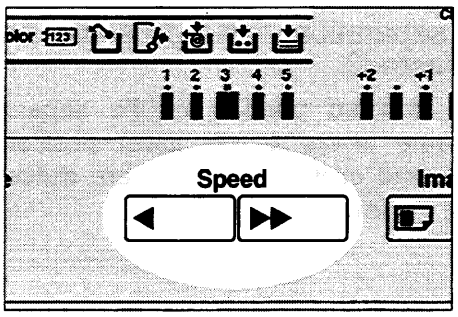
To prevent paper feed misfeeds:



When paper is curled, correct the curl as shown.

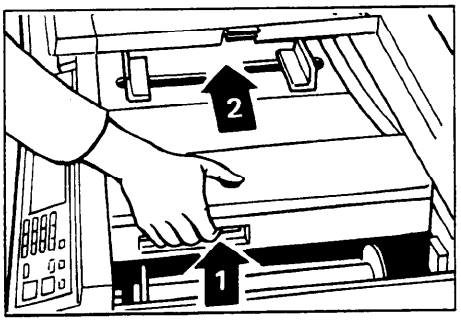


When paper edges stick together, shuffle the paper as shown.

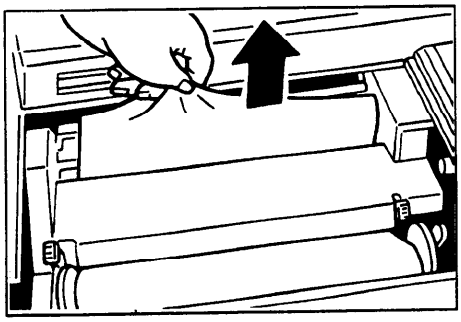


When you use post cards and thick paper, lower the printing speed to step 2 or 1. (See page 19.)

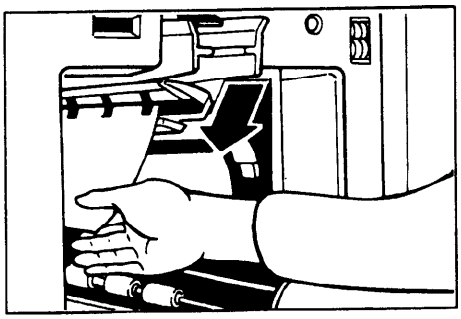
"⚠+ C" Master misfeed in master feed section



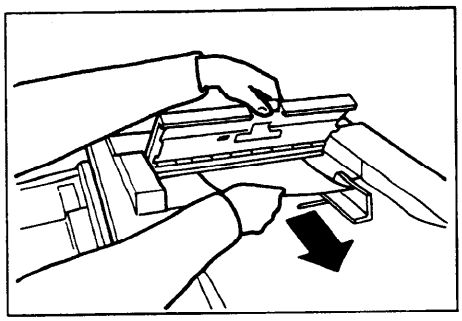
1. Open the original table.
   - Lift the original table release lever and slide the original table all the way to the left.



2. Remove the misfed master.



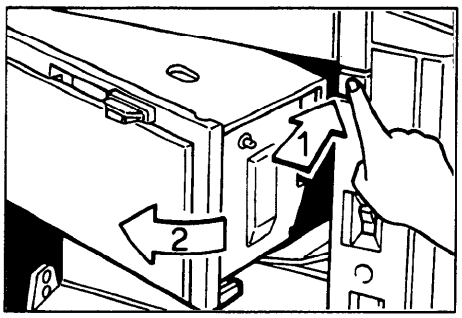
3. If you could not remove the misfed master in step 2, take out the drum and remove the misfed master from inside. (For how to take out the drum unit, see page 55.)



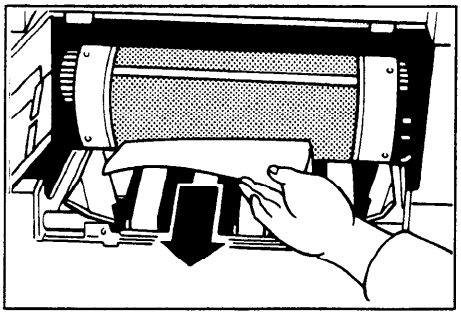
4. If the original misfeeds in the optional document feeder, press the ADF open lever and open the ADF unit to remove the misfed sheet.

5. Return the original table to its original position.

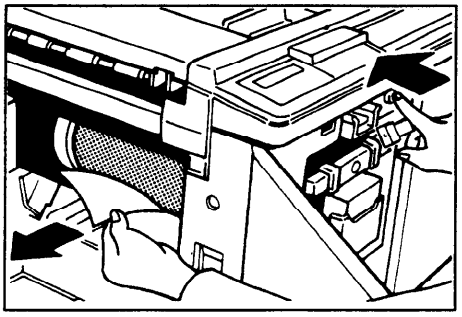
"⚠+ E" Paper wrapping around the drum



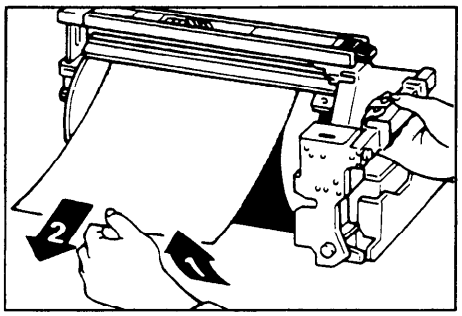
1. Push the master eject unit open button and open the master eject unit.



2. Remove the misfed paper.



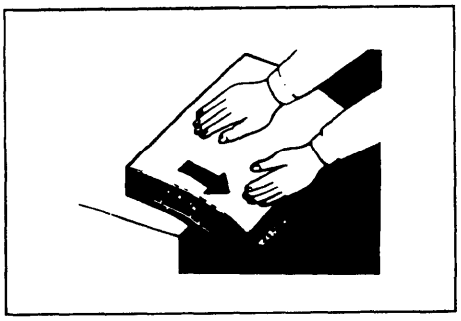
3. If the paper is completely wrapped around the drum, peel off the edge of the paper. Then, close the master eject unit and press the drum until the lamp turns green again. And then, open the master eject unit and remove the misfed paper.



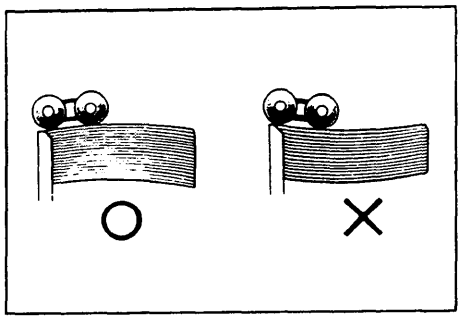
4. If you cannot remove the misfed paper, pull out the drum unit after confirming the lamp is green, and remove the misfed paper from the drum.

5. Close the front cover and master eject unit.

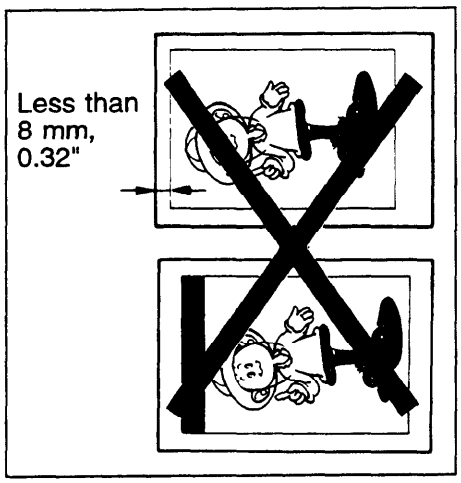
If the paper is curled or the original's leading edge margin is too narrow, the following action is necessary.



When you use curled paper, correct the curl as shown.



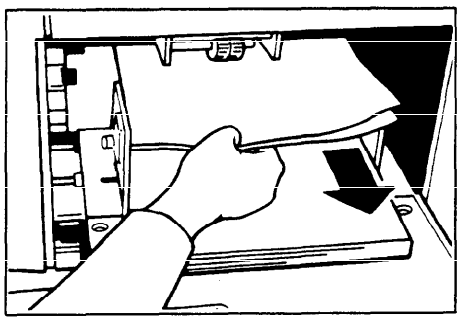
If you cannot correct the paper curl, stack the paper with the curl face down as shown.



When the leading edge margin of the original is less than 8 mm, 0.32" or there is a solid image on the leading edge, insert the original with the widest margin first or make a leading edge margin by making a copy.

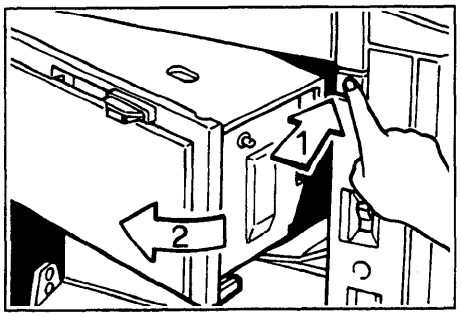
"⚠+ E + B" Misfeed in paper feed section
Paper wrapped around the drum

Misfeed in paper feed section

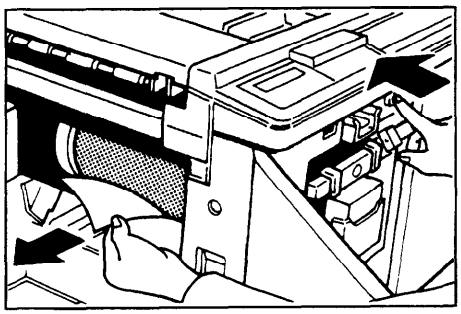


1. Slowly but firmly pull out the paper.

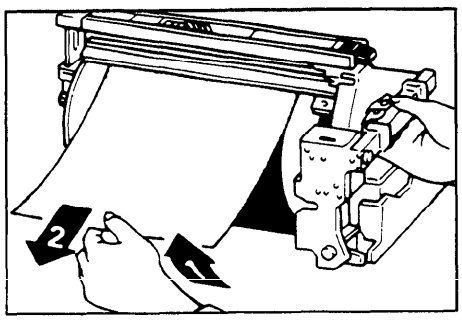
Paper is wrapped around the drum



1. Push the master eject unit open button and open the master eject unit.
2. Remove the misfed paper.

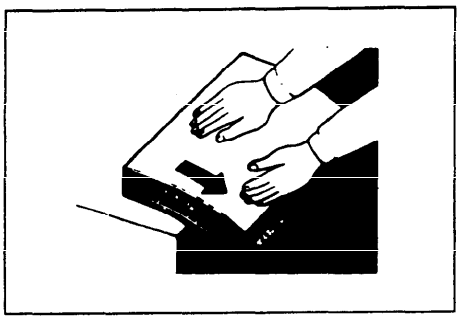


3. If the paper is completely wrapped around the drum, peel off the edge of the paper. Then, close the master eject unit and press the drum until the lamp turns green again. And then, open the master eject unit and remove the misfed paper.

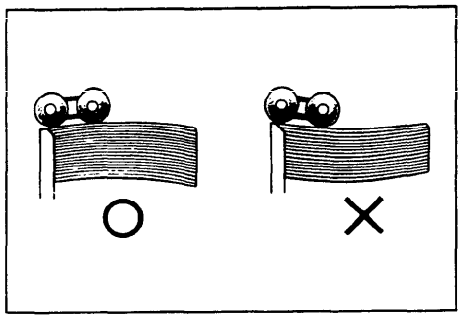


4. If you cannot remove the misfed paper, pull out the drum unit after confirming the lamp is green, and remove the misfed paper from the drum.
5. Close the master eject unit.

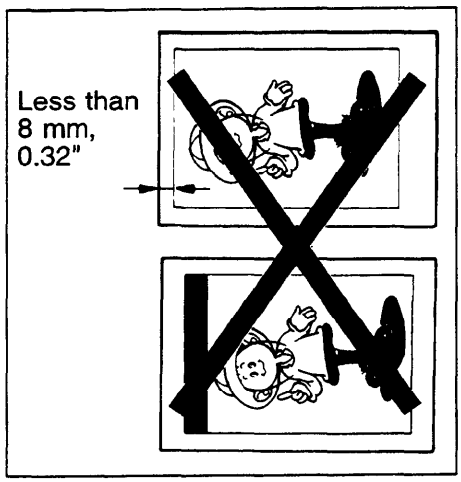
If the paper is curled or the originals leading edge margin is too narrow, the following action is necessary.



When you use curled paper, correct the curl as shown.



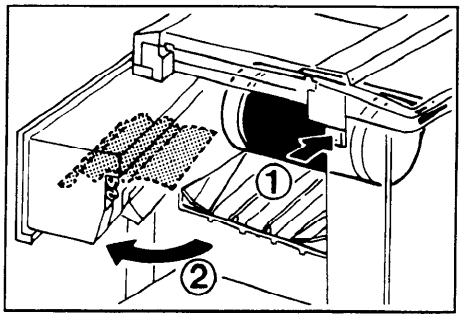
If you cannot correct the paper curl, stack the paper with the curl face down as shown.



When the leading edge margin of the original is less than 8 mm, 0.32" or there is a solid image on the leading edge, insert the original with the widest margin first or make a leading edge margin by making a copy.

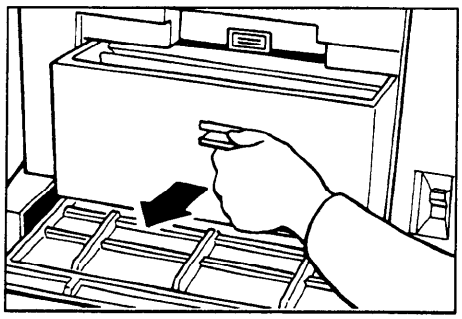
"⚠+ F" Master misfeed in the master eject section
Master wrapped around the drum

Check where the misfeed is occurring

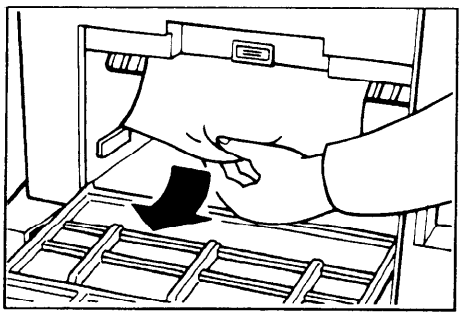


1. Press the master eject unit open button and open the master eject unit.
2. Check where the misfed master is. Remove the misfed master as follows.

When a master misfeed occurs in the master eject section

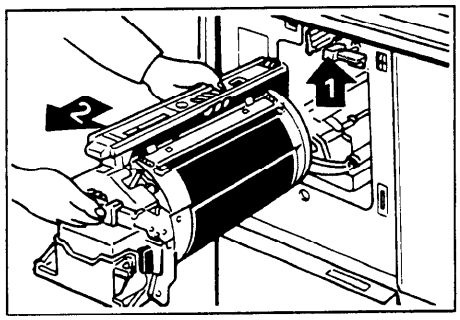


1. Open the master eject container cover. Then, pull out the master eject box.

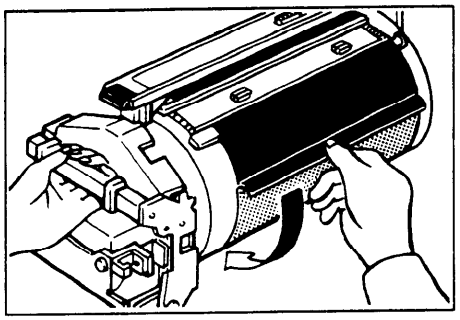


2. Remove the misfed master.
   - Be careful not to stain your hands with ink when you touch used masters.
3. Return the master eject box to its original position and close the master eject container cover.

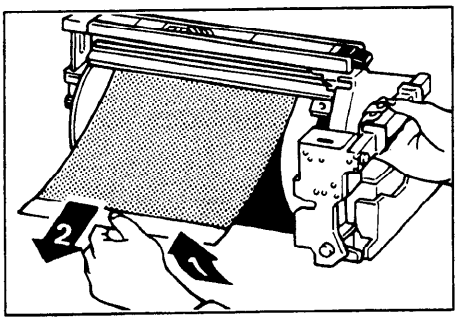
When a master misfeed occurs on the drum



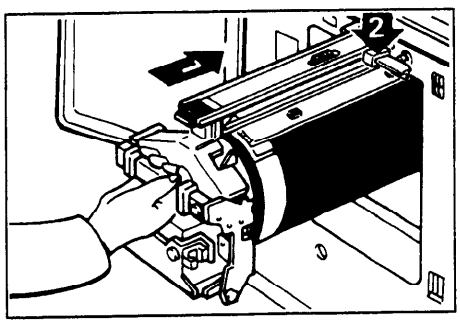
1. Lift the lever to unlock the drum unit and pull out the unit.



2. Grasp the drum unit handle and remove the master from the drum.

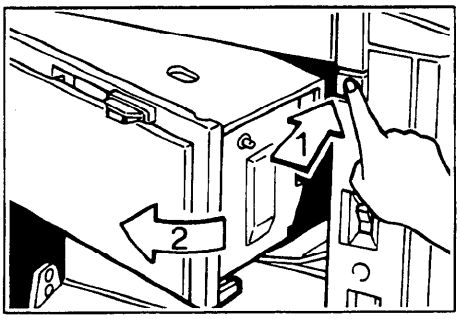


3. Pull the master out of the master clamp.

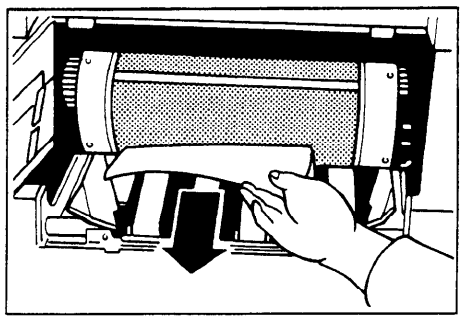


4. Reinsert the drum and put the lever back in place.

"⚠ + G" Paper misfeed in the paper exit section



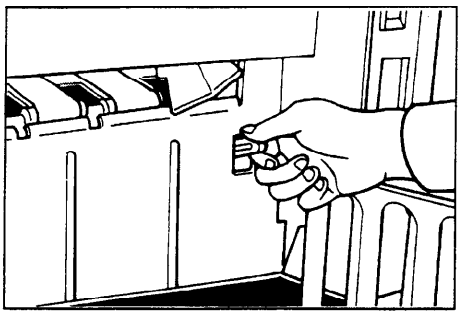
1. Push the button to open the master eject unit.



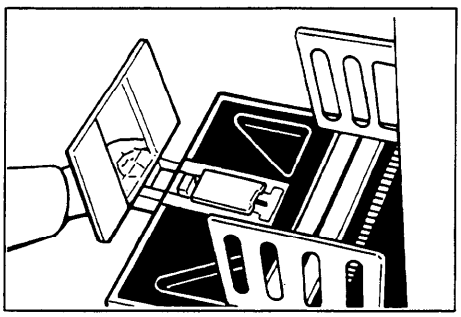
2. Remove the misfed paper.

3. Close the master eject unit.

Check the following adjustments before restart operation



1. Is the wing guide release lever in the correct position?

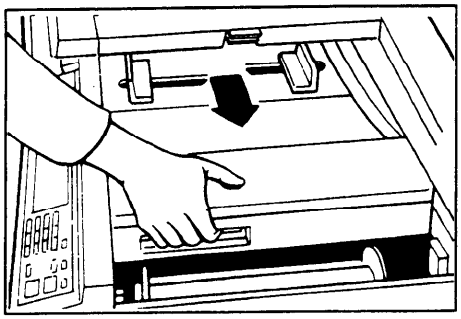


2. Is the paper delivery end plate in the correct position?

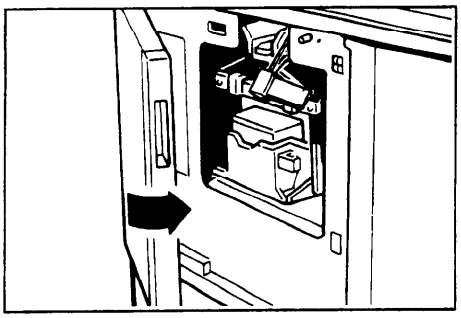
When The Open Cover/Unit Indicator ( ) Blinks

Close the cover
Close the ADF unit
Set the drum completely
Set the paper feed table
Set the paper delivery table

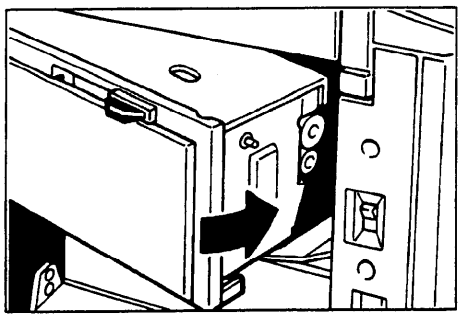
Make sure that the following door/units are closed.



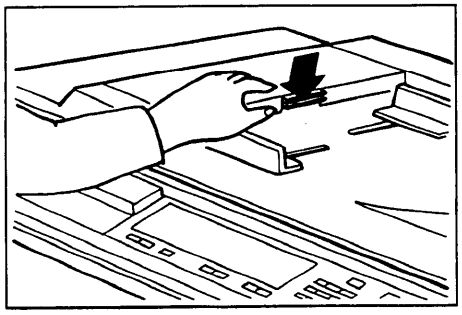
Original Table
Slide the original table until it locks in position.



Front Door
Close the front door completely.

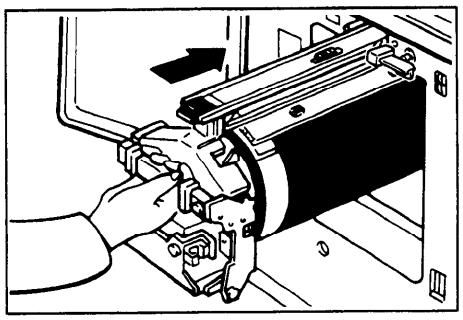


Master Eject Unit
Close the master eject unit until it locks in position.



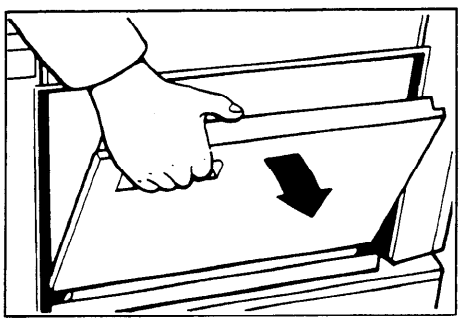
ADF Unit (Option)
Close the ADF unit until it locks in position.

Make sure that the drum is completely set in position.

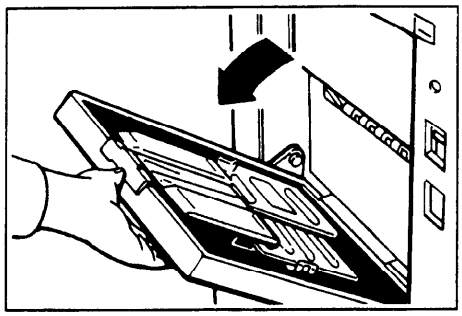


Set the drum completely until it locks in position.

Make sure that the paper feed table and the paper delivery table are open.



Paper Feed Table
Open the paper feed table.



Paper Delivery Table
Open the paper delivery table.

When A Supply/Exchange Indicator Blinks

Load paper

See page 82.

Load new ink cartridge

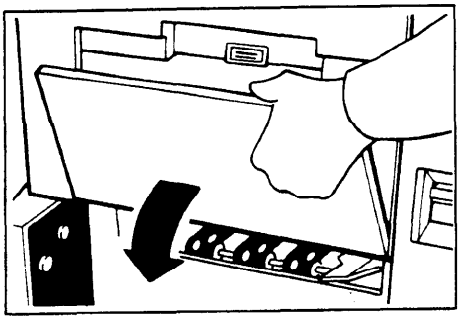
See page 84.

Load new master roll

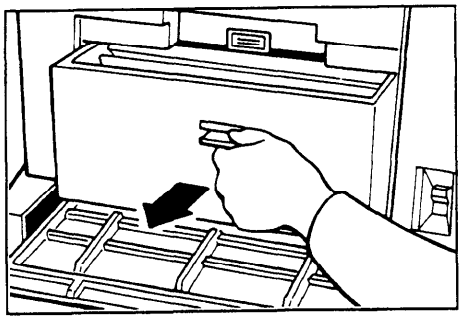
See page 86.

Empty master eject box

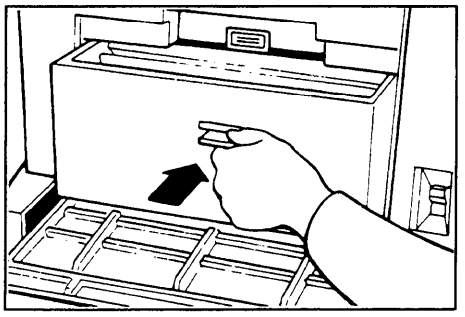
Set the master eject box



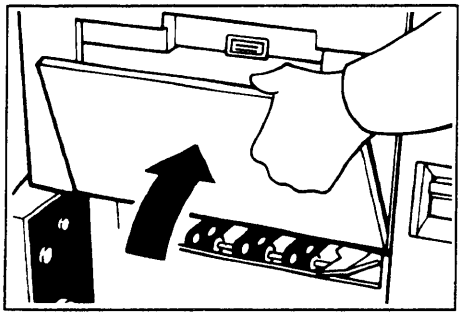
1. Open the master eject container cover.



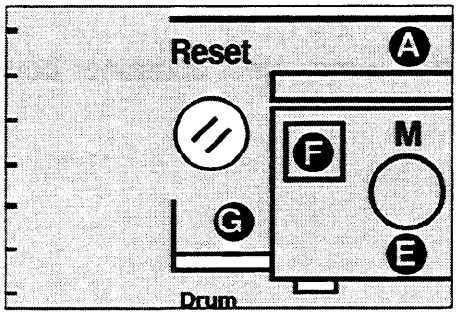
2. Take out the master eject box and remove the used masters.
   - Spread an old newspaper, then turn the master eject box upside down on it to remove the used masters. Then, throw away the masters. The masters are burnable trash.



3. Reinstall the master eject box.
   Push in the box until it touches the inside bracket.



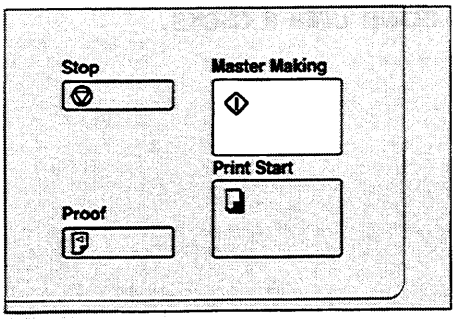
4. Close the cover of the master eject container.



5. Press the **Reset** key.

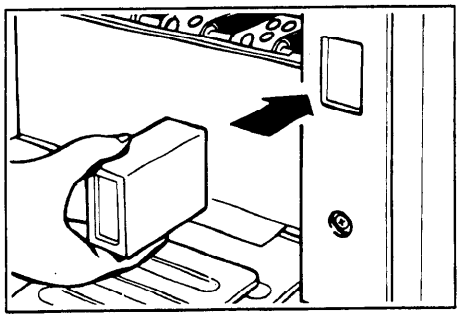
When Other Indicators Blink

M Master is not wrapped around the drum



Set the original on the exposure glass and press the **Master Making** key.

123 Set the key counter



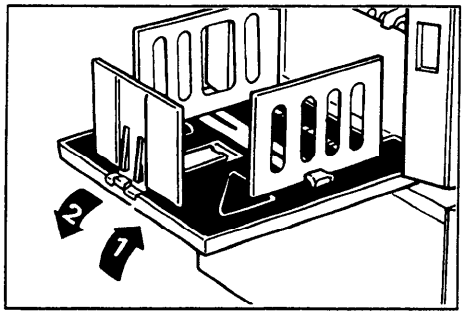
The key counter (option) is not set. Insert the key counter.

Color **(81/2" x 11" version)**

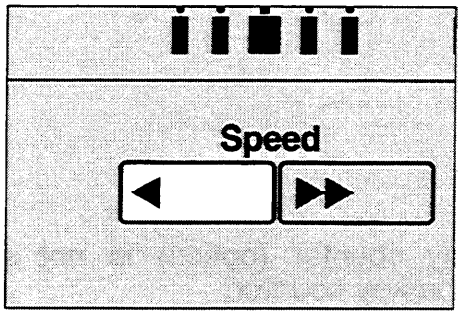
(A4 version)

Color drum unit is installed

When The Prints Are Not Delivered In A Neat Stack, Or The Prints Are Thrown Over The Paper Delivery Table

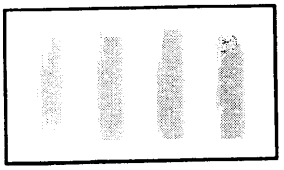


1. Lift the paper delivery table a little and bring it down until it clicks.



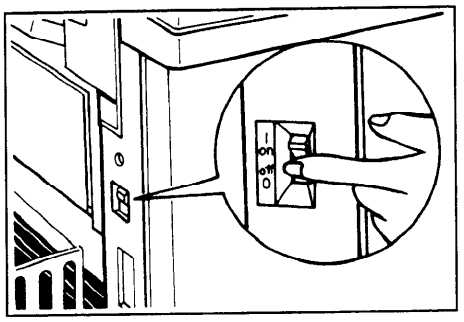
2. Reduce the printing speed by pressing the "◀" key.

Poor Printing

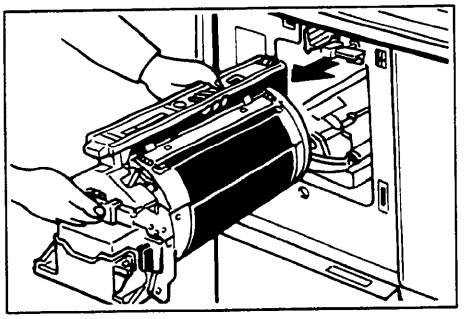


Dirty Background

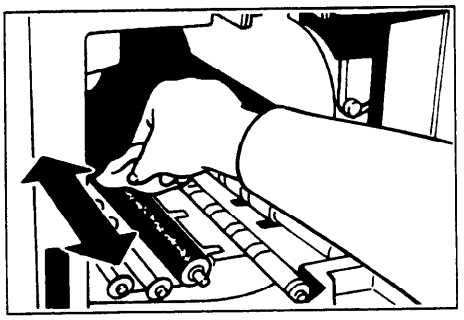
- When you use paper smaller than the original, select the proper reduction ratio. Otherwise, you might get dirty background prints.
- When you use postcards and the like, the background might be dirty because postcards do not absorb ink well.



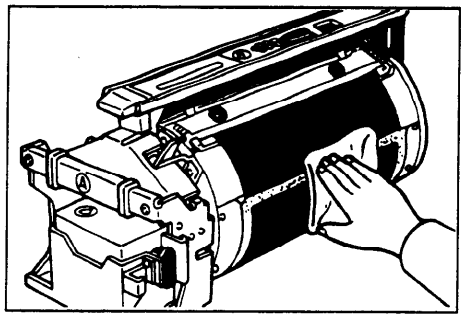
1. Turn off the main switch.



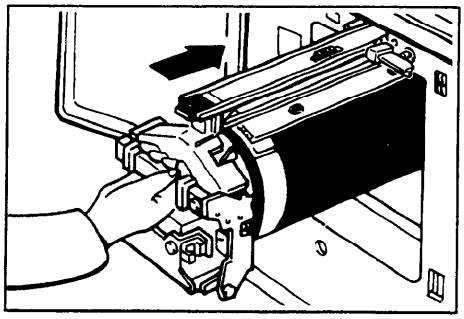
2. Pull out the drum unit. (Refer to page 55 for the details.)



3. Clean the pressure roller with a clean cloth.

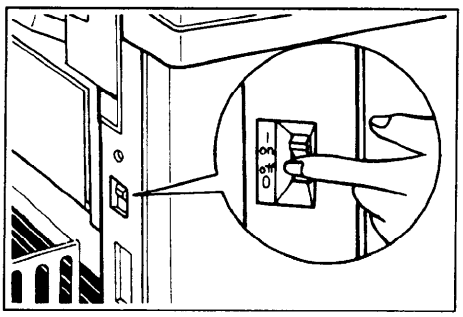


4. Remove with a clean cloth any ink that has accumulated on the trailing edge of the drum unit.

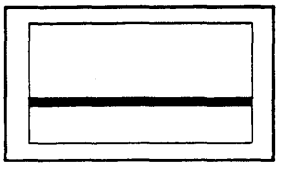


5. Insert the drum unit until it locks in position, then lower the drum unit lock lever.

6. Close the front door.



7. Turn on the main swich.

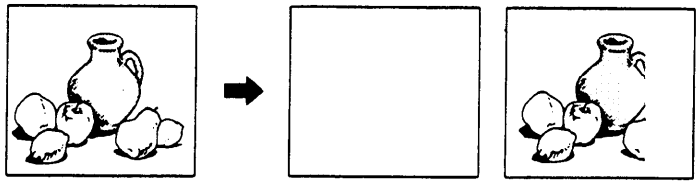


Black line/stain

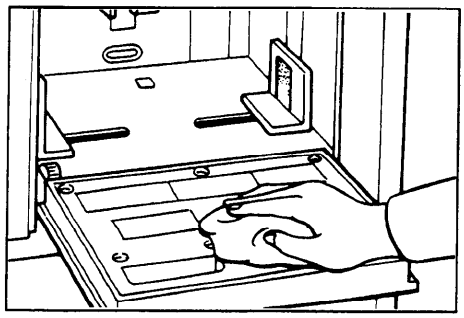
- If there is no margin or if there is a solid image area near the leading edge of the original, make a margin of at least 8 mm, 0.32" at the leading edge. Otherwise, the paper exit pawl might become dirty and cause black lines on prints.

Check the following parts and clean them if they are dirty.

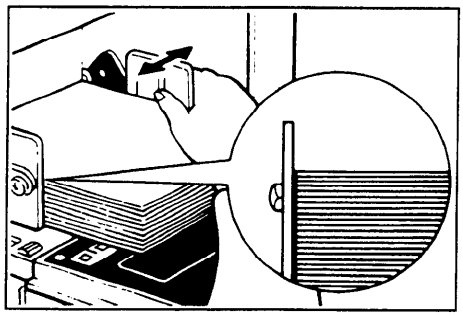
1) Platen cover. (See page 90.)
2) Exposure glass. (See page 90.)
3) Sheet. (See page 91.)



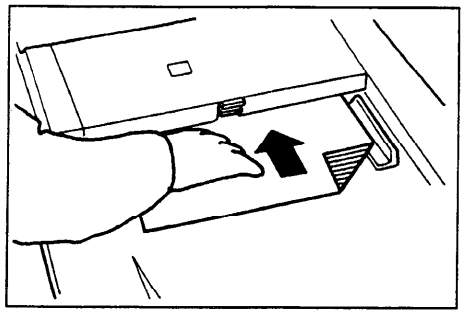
White prints or incomplete prints



Check the paper size detection sensor and clean it if dirty.

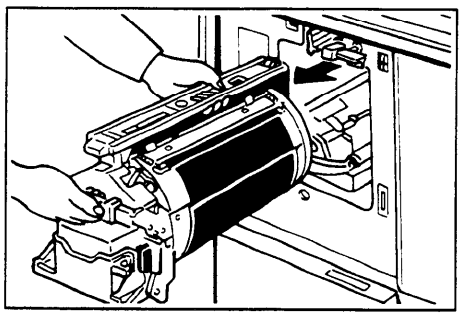


Make sure that the paper feed side plates contact the paper lightly.

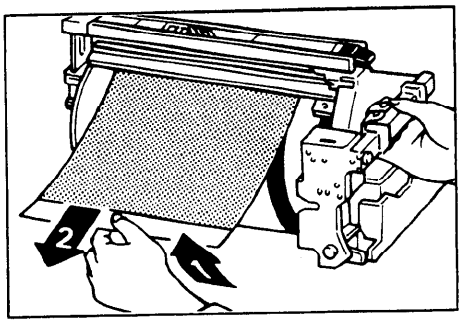


When you use the optional document feeder, make sure that the original guides contact the originals lightly.

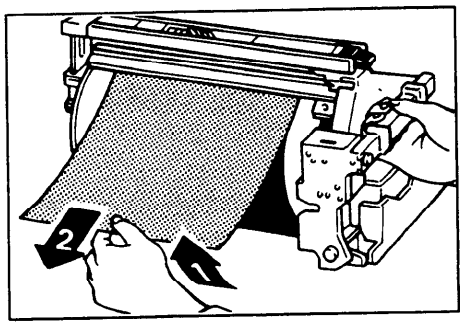
When you get white or incomplete prints even if you check the above, do the following procedure.



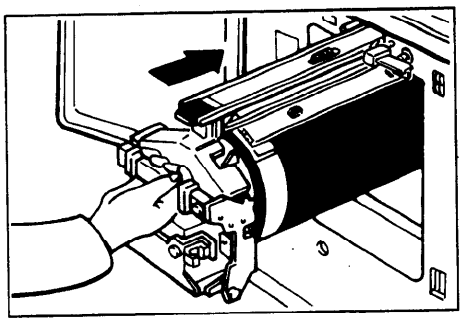
1. Pull out the drum unit. (Refer to page 55 for the details.)



2. Remove the master from the drum.

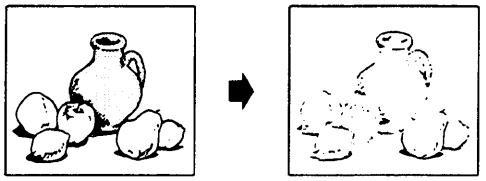


3. Remove the paper that is stuck to the drum.



4. Insert the drum unit until it locks in position, then lower the drum unit lock lever.

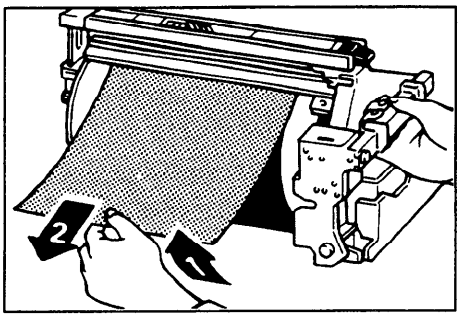
5. Close the front door.



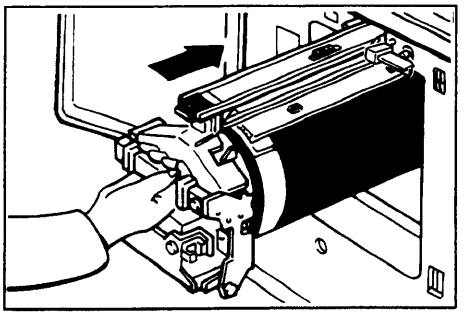
Light prints

- When the machine is not used for a few hours, the image density of the first few prints delivered might be low.
- When you use a light image original, adjust the image density before making the master.

1. Pull out the drum unit (Refer to page 55 for the details.)



2. Remove the two masters wrapped around the drum.



3. Insert the drum unit until it locks in position, then lower the drum unit lock lever.

OPERATION NOTES

1. If there is no margin or if there is a solid image area near the leading edge of the original, make at least an 8 mm, 0.32", margin at the leading edge; otherwise, the paper might wrap around the drum or the paper exit pawl might become dirty and cause black lines on prints.

2. When the paper is curled, stack the paper with the curl face down, otherwise the paper might wrap around the drum or stains may appear.

3. Make sure to make a few trial prints to check the image position because the image position of the trial print might not correspond with that of the original.

4. If the image registration is not consistent, slow the printing speed down to step 1 or 2.

5. The leading edge of the prints might become stained if the edge touches the image of prints on the paper delivery table.

6. When performing duplex or multicolored printing, leave the printed paper for a while before the next printing in order to let the ink dry on the printed paper. If this is not done, feed roller marks will appear on the print image.

7. If the machine is not used for a long period, the image density might decrease if the ink on the drum might dry. Make extra prints until the image density recovers.

8. When the machine is used in low temperature conditions, the image density might decrease. In this case, slow the printing speed down to step 1 or 2.

9. The ink of the print on the paper delivery table might stick to the back side of the next print.

10. When making duplex prints, misdetection of paper wrapping may occur if the paper delivery sensor detects a black area at the leading edge of the back side. Keep at least an 8 mm, 0.32" margin at the leading edge of the back side of the printing paper.

11. Press the **Proof** key to perform a test print as the first few prints may be light.

12. When the machine is on and the power source is less than 90% of the specified amount, printing quality will decrease. Therefore, make sure the supply from your electrical outlet is at least 90% of the required amount.

13. Postcards and the like do not absorb ink well. Offset images might appear on the rear side of subsequent prints. Solid image originals will cause offset image prints.

14. As various kinds and qualities of paper exist, some paper might be wrapped around the drum or cause misfeeds.

15. If your hands are stained with ink:

    - Avoid prolonged or repeated contact with skin.
    - Cleanse skin thoroughly after contact, before breaks and meals, and at the end of the work period.
    - Ink is readily removed from skin by waterless hand cleaners followed by washing with soap and water.

    Also, be careful not to get any ink on your clothing while emptying the master eject box or while loading a new ink cartridge.

16. When making duplex prints or when using non-white printing paper, the paper size detection sensors might malfunction and some part of the image might not appear on the print. In this case, place a blank sheet under the printing paper on the paper feed table.

17. When making duplex prints or when using non-white printing paper, the paper end sensor might malfunction and fail to detect the paper. In this case, place a blank sheet under the printing paper on the paper feed table.

18. The outer portion of the image might not be printed under low temperature. In this case, slow the printing speed down to step 1 or 2, or increase the room temperature.

19. When printing a large solid area on A3, 11" x 17" paper, the sides of the print tend to curl up after the print is fed out to the paper delivery table. The next sheet that feeds out pushes against the curled sheet and a paper misfeed occurs. In this case, slow the printing speed down (1 or 2 steps).

20. The paper exit pawl might contact the printing paper and cause black lines
the prints. In this case, increase the printing speed or make a new master wi
lighter image density mode.

21. The image density varies according to the printing speed and the roo
temperature. So, adjust the printing speed or increase the room temperature.

22. When you make a lot of prints from a small image, ink may ooze out from tl
edges of the master, especially under high temperature and when printing
two or more colors. In this case, make a new master.

23. Use ink made within one year. Ink stored for a long period tends to dry slow
and yield lower image density.

24. If you use originals that have bold letters or solid images at the leading edge
you might get prints with dirty edges. In this case, insert the widest marg
first, or raise the printing speed.

COMBINATION CHART

This combination chart shows which modes can be used together.

○ : means that these modes can be used together.
— : means that these modes cannot be used together.
▲ : means that some functions in these modes cannot be used together.

		1	2	3	4	5	6	7	8	9	10	11	12
1	Enlargement		—	—	○	○	○	○	○	○	○	—	○
2	Reduction	—		—	○	○	○	○	○	○	○	—	○
3	Zoom	—	—		○	○	○	○	○	○	○	—	○
4	Auto Cycle	○	○	○		○	○	○	○	○	○	○	○
5	Memory/Class	○	○	○	○		○	○	○	○	○	○	○
6	Combine 2 Originals	○	○	○	○	○		○	○	○	○	—	—
7	Margin Erase	○	○	○	○	○	○		○	○	○	—	○
8	Make-up	○	○	○	○	○	○	○		▲	○	—	○
9	Image mode	○	○	○	○	○	○	○	▲		○	—	○
10	Image Density	○	○	○	○	○	○	○	○	○		—	○
11	On-Line	—	—	—	○	○	—	—	—	—	—		○
12	Overlay	○	○	○	○	○	—	○	○	○	○	○	

SPECIFICATIONS

Main Frame

Configuration:	Desk top
Printing Process:	Full automatic one drum system
Original Type:	Sheet/Book
Original Size:	Maximum 307 mm x 432 mm, 12.0" x 17.0"
Pixel Density:	400 dpi
Image Mode:	Photo mode (Sand pattern) Line mode (Standard mode) Sharpen mode
Reproduction Ratio:	8 1/2" x 11" version: 93%, 77%, 74%, 65% A4 version: 93%, 87%, 82%, 71%
Enlargement Ratio:	8 1/2" x 11" version: 155%, 129%, 121% A4 version: 141%, 122%, 115%
Zoom:	From 50% to 200% in 1% steps
Printing Area:	Maximum 290 mm x 412 mm, 11.4" x 16.2" (A3 drum) Maximum 290 mm x 204 mm, 11.4" x 8.0" (A4 drum)
Print Paper Size:	Maximum 325 mm x 447 mm, 12.7" x 17.5" Minimum 90 mm x 148 mm, 3.6" x 5.9"
Leading Edge Margin:	8 mm ± 3 mm, 0.32" ± 0.12"
Print Paper Weight:	47.1 g/m^2 to 209.3 g/m^2, 12.5 lb to 55.6 lb
Print Speed:	60 - 120 cpm (5 steps)

First Print Time:

Less than 38 seconds
(A3, 11" x 17")
Less than 35 seconds
(A4, 8 1/2" x 11" lengthwise with the Margin Erase function)

Color Printing:

Drum unit replacement system
(red, blue, green, and brown)

Image Position:

Vertical ± 20 mm, 0.79"
Side ± 10 mm, 0.39"

Paper Feed Table Capacity:

Table mode:	1,000 sheets ($75\ g/m^2$, 20 lb)
Cassette mode:	500 sheets ($75\ g/m^2$, 20 lb)

Paper Delivery Table Capacity:

1,000 sheets ($75\ g/m^2$, 20 lb)

Master Eject Box Capacity:

50 masters with A3 drum
90 masters with A4 drum

Dimensions (W x D x H):

[Stored]
719 x 698 x 644 mm,
28.3" x 27.5" x 25.4"
[Set up]
1,331 x 698 x 644 mm,
52.4" x 27.5" x 25.4"
[Set up with cabinet]
1,331 x 698 x 1,070 mm,
52.4" x 27.5" x 42.1"
[Set up with A3 cassette]
1,387 x 698 x 644 mm,
54.6" x 27.5" x 25.4"

Weight:

Machine: 128 Kg, 282.2 lb

Noise Emission:
(Sound pressure level*)
*** = The measurements are to be made according to ISO 7779.**

Less than 74 dB

Printing:	60 rpm	less than 64 dB
(Average)	90 rpm	less than 67 dB
	120 rpm	less than 72 dB

Optional Equipment:

Drum unit: Color Drum
(A3, 11" x 17") - red, blue, green, brown
(A4, 8 1/2" x 11")- black, red, blue, green, brown
Key Counter
A3 Paper Cassette (B4, 8 1/2" x 14", A3, 11" x 17")*
A4 Paper Cassette (A4, 8 1/2" x 11", B5)*
Tape Dispenser
Cabinet
Document Feeder
Make-up

*The optional paper cassettes are not sold in some areas.

Document Feeder

Original Type: Sheet

Original Weight: 40.7 g/m^2 to 127.9 g/m^2, 10.8 lb to 34 lb

Original Size: Max. 307 mm x 432 mm, 12.0" x 17.0"
Min. 90 mm x 140 mm, 3.6" x 5.6"

First Print Time: Less than 38 seconds (A3, 11" x 17")
Less than 35 seconds (A4, 8 1/2" x 11")

Original Capacity 20 sheets (66 g/m^2, 17.6 lb) or 1.8 mm, 0.07" height

Consumables

Name	*Size*	*Remarks*
Master:	Length: 125m(410 ft)/roll Width: 320 mm (12.6") 2 Rolls/case	225 masters can be made per roll with the A3 drum. 370 masters can be made when using the A4 drum. Storage: 0 - 40°C, 10 - 95%RH
Ink-Black	800 cc/pack* 500 cc/pack* 5 packs/case	Environmental conditions: - 5 - 40°C 10 - 95%RH
Ink-Red	500 cc/pack 5 packs/case	
Ink-Blue	500 cc/pack 5 packs/case	
Ink-Green	500 cc/pack 5 packs/case	
Ink-Brown	500 cc/pack 5 packs/case	
Tape for Tape maker	35m(114.8ft)/roll	

* Ink capacity can be different depending on the area.

❒ Specifications are subject to change without notice.

Chapter 2

WHAT IS IMAGE MAKE-UP

The image make-up mode enables you to do more than just make **an exact copy of the original**. A variety of editing and image processing functions allow you to quickly and easily customize your prints.

Main Features

- The use of command sheets allows you to create special effects without cutting and pasting - up to 4 commands can be given for an original.
- By combining image make-up functions with color drums, you can create a variety of printing effects.

Practical Examples Of Image Make-up Functions

Outline mode

Original

Print

Delete mode

Original

①16+7=23 ⑥37+9=46

②29+6=35 ⑦12+1=13

③14+2=16

④18+4=22

⑤23+8=31

Print

①16+7= ⑥37+9=

②29+6= ⑦12+1=

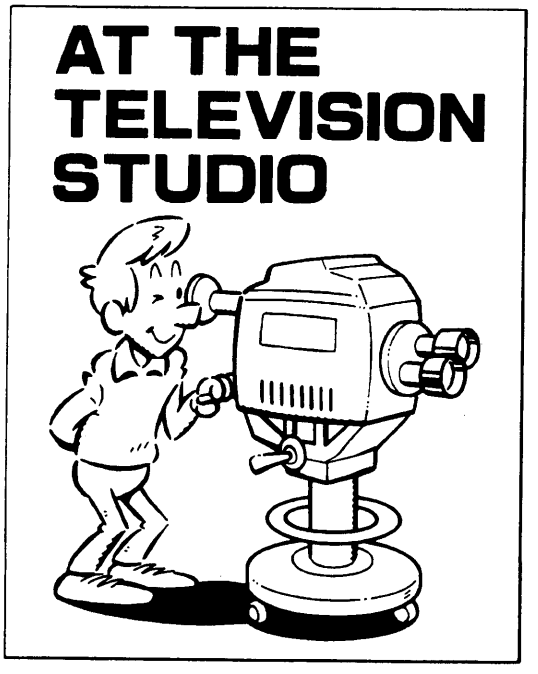
③14+2=

④18+4=

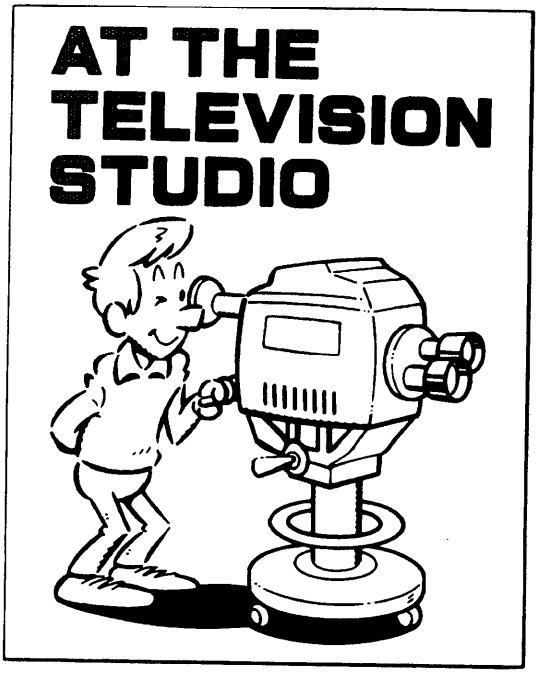
⑤23+8=

Image Pattern mode

Original

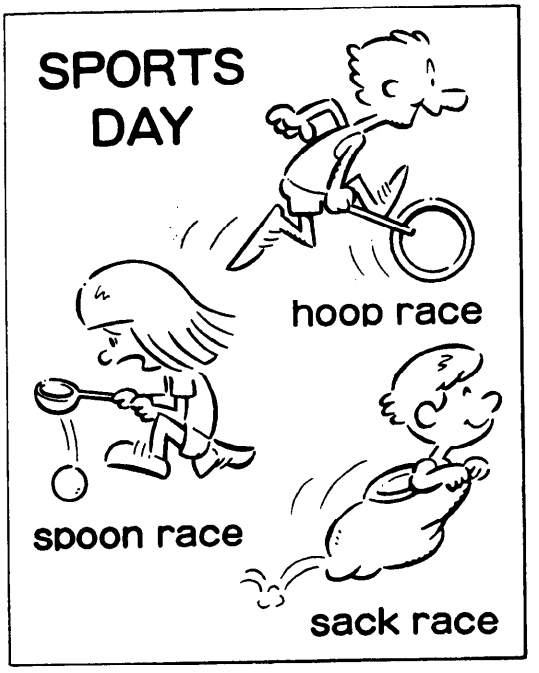


Print



Area Pattern mode

Original



Print

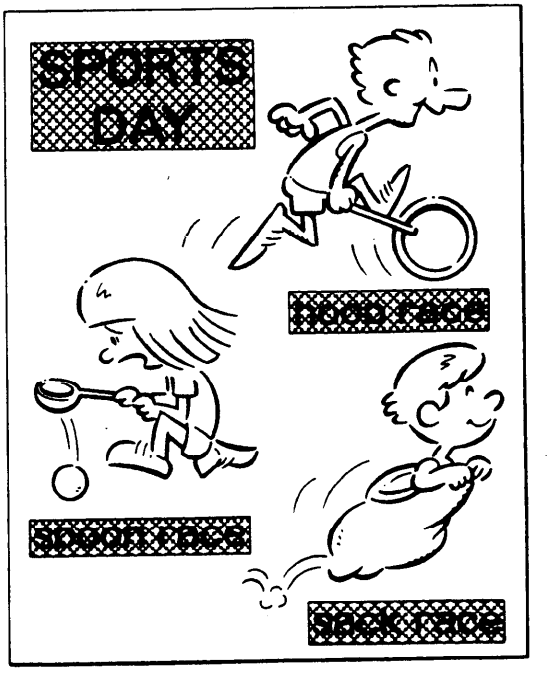


Image Outline and Area Pattern mode

Original

Print

Image Make-up modes for designated areas

The following commands are for designated areas.

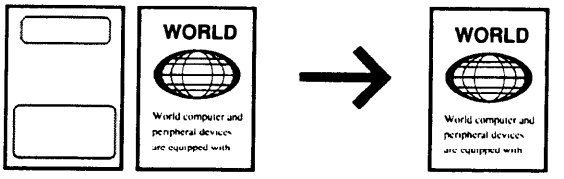
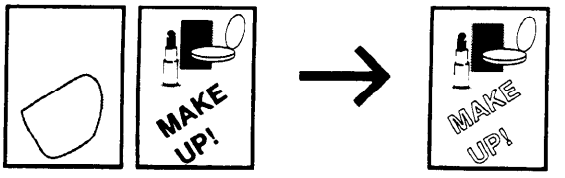
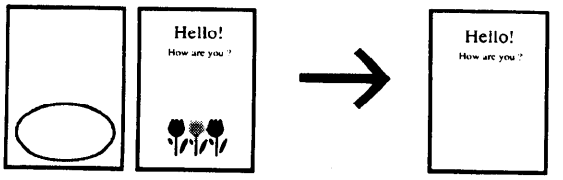
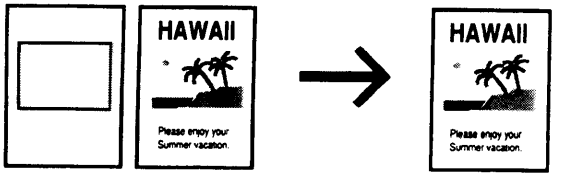
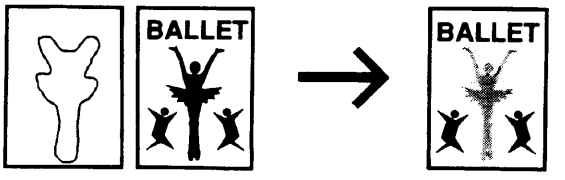
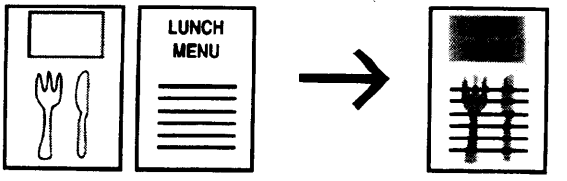
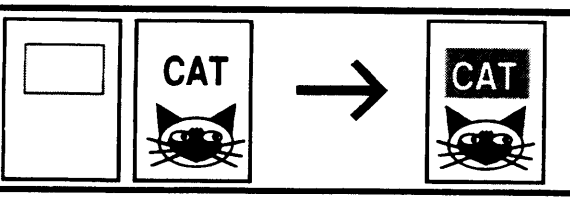
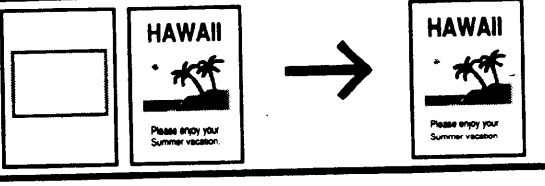
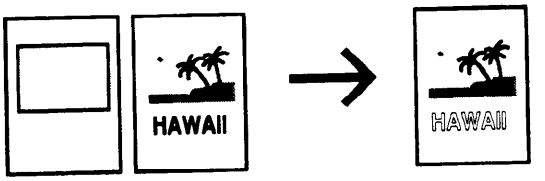
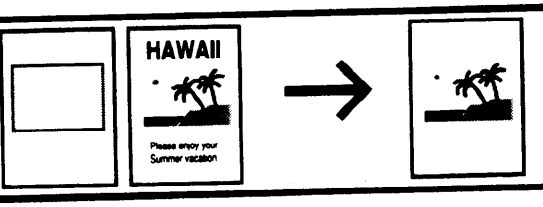
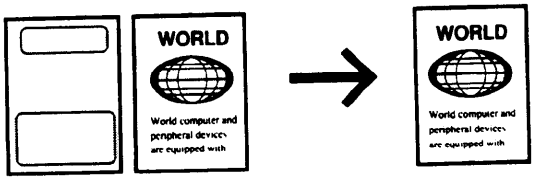
Mode Designated Area		Sample Command sheet / Original (Closed area method) Print	Command No. Closed area method	 Diagonal line method
1.	Line mode		Fn 1	Fn 11
2.	Outline mode		Fn 2	Fn 12
3.	Delete mode		Fn 3	Fn 13
4.	Photo mode		Fn 4	Fn 14
5.	Image Pattern mode		Fn 5	Fn 15
6.	Area Pattern mode		Fn 6	Fn 16
7.	Image Outline & Area Pattern mode		Fn 7	Fn 17

Image Make-up modes for outside designated areas

The following commands are for the area outside the designated areas.

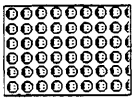
Mode Undesignated Area		Sample Command sheet / Original → Print	Command No.
1.	Line mode: The area outside designated areas is printed in Line mode.		Fn 1
2.	Outline mode: The area outside designated areas is printed in outline mode.		Fn 2
3.	Delete mode: The area outside the designated areas is deleted.		Fn 3
4.	Photo mode: The area outside the designated area is printed in photo mode.		Fn 4

- In Make-up mode, commands must be given for both designated areas and outside the designated area.

Background Patterns

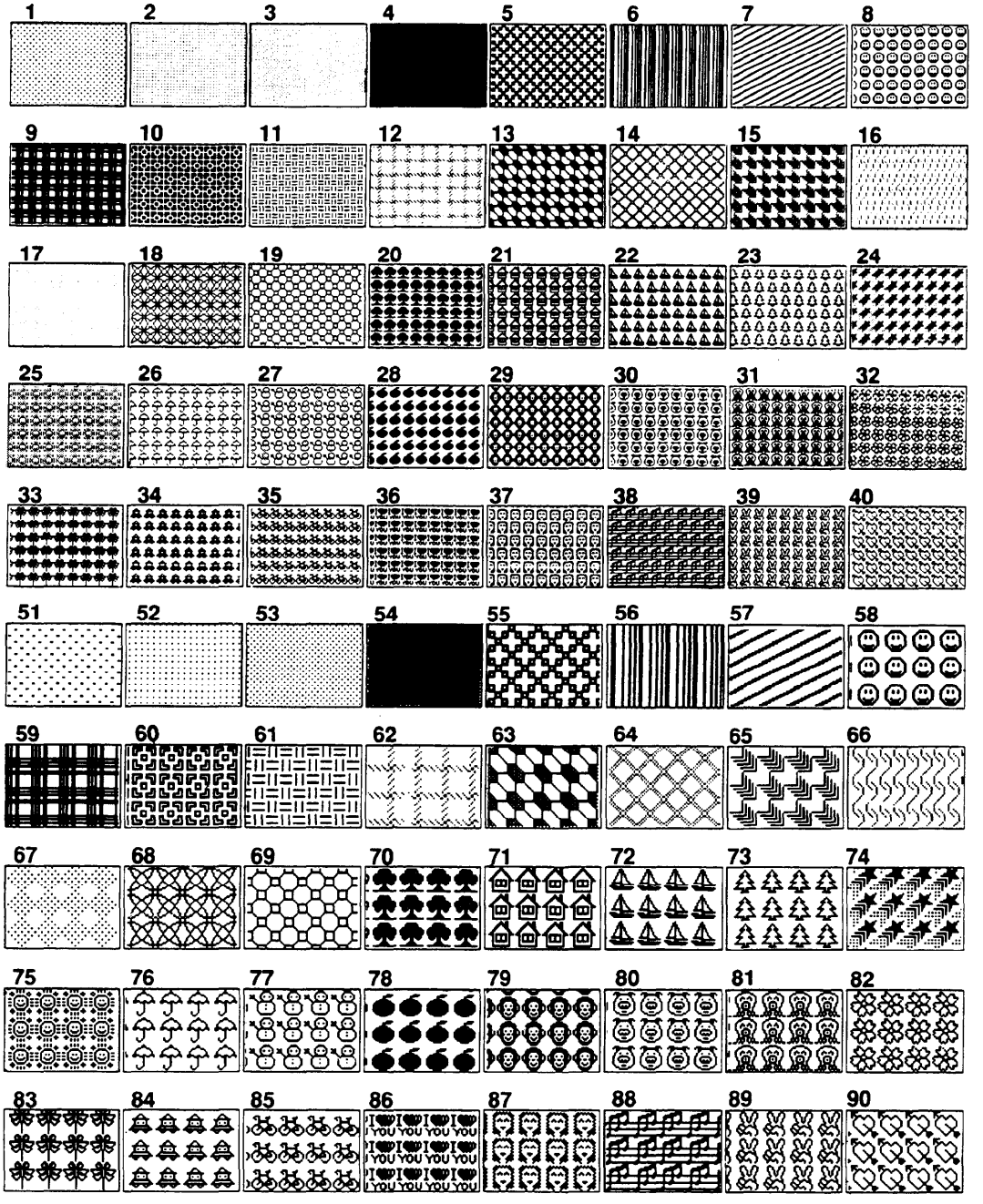
There is a total of 160 background patterns for Image Make-up mode: 40 basic patterns, 40 patterns similar to the basic patterns but with pattern elements at twice the size, and 90º rotations of all the basic and enlarged patterns.

[Example]
Pattern No. 108



Paper feed direction

- **The basic patterns are numbered 1 to 40.**
- **The patterns with enlarged elements are numbered 51 to 90.**
- **The rotated pattern's numbers are obtained by adding 100 to a basic or enlarged pattern's number.**



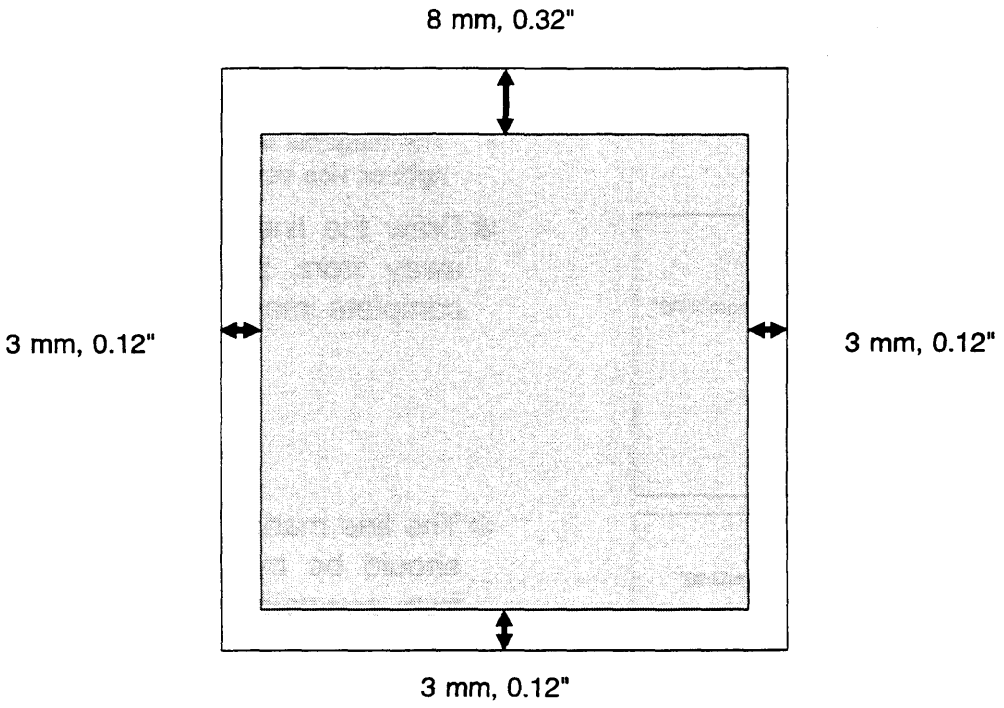
PREPARING IMAGE MAKE-UP

Outline

Command sheets are fed first so that the machine can recognize the areas of th original which are to be edited as designated areas.

Command sheet

- The command sheet is a sheet of paper for designating areas to be edite **Command sheets must be made on white or translucent paper, an should be the same size as the original.**
- Poor quality paper (such as newsprint, recycled paper, etc.) should not b used **for command sheets because** any dark spots or streaks will be rea as designated areas.
- Do not use blotting paper or other absorbent papers for command shee because ink might leak through the paper and get the exposure glass dirty.
- **You can designate areas inside the limits given below.**

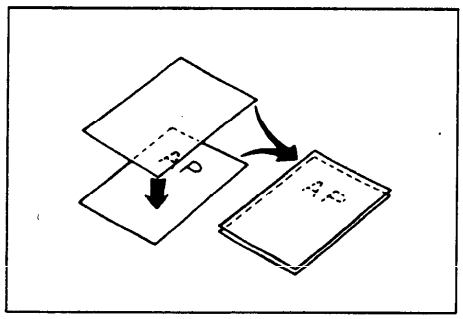


How To Make A Command Sheet

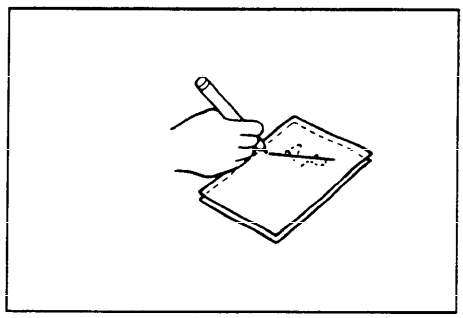
There are two ways of designating areas: the diagonal line method and the closed area method.

When using the diagonal line method

- A diagonal line must be drawn through the area corresponding to what you want to edit.



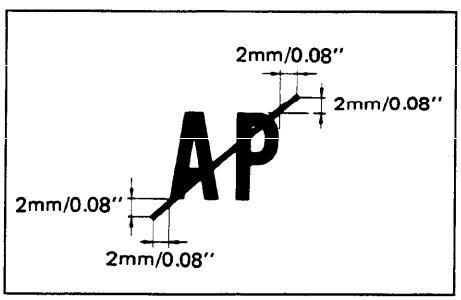
1. Put the command sheet on top of the original.



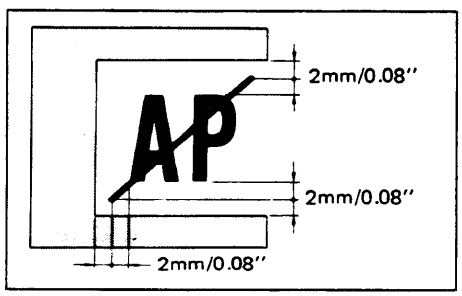
2. Draw a line using a felt tip pen (black, red or blue) with a thickness of at least 1 mm, 0.04", making sure there is no break in the line.

OK	NG

- The diagonal line can be drawn from left to right or vice versa.



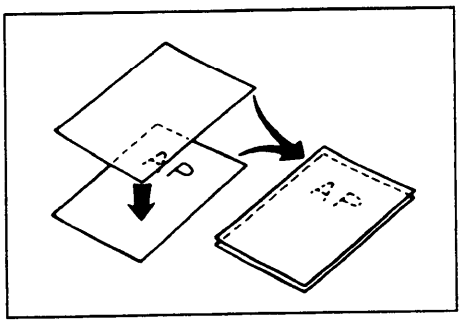
✻ Draw the line at least 2 mm, 0.08", away from the image so that the complete image can be recognized.



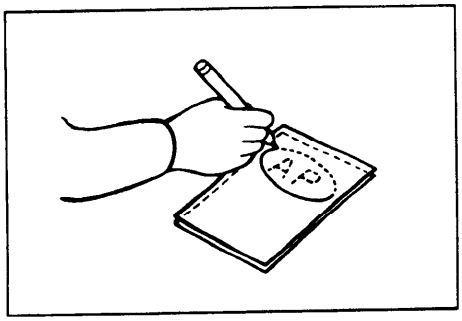
✻ The line marking the designated area should be more than 2 mm, 0.08", from any neighboring image.

When using the closed area method

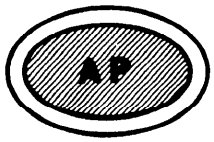
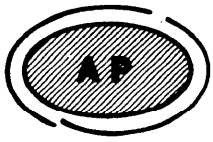
- The line designating the area must be a closed loop.

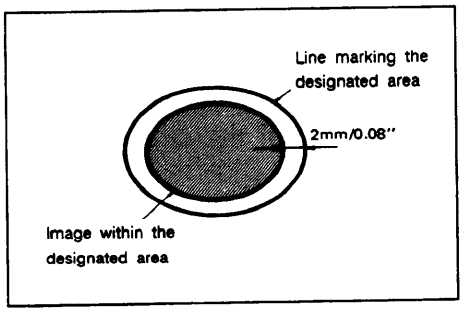


1. Put the command sheet on top of the original.

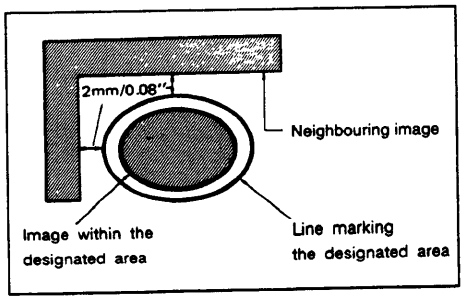


2. Using a black, red, or blue felt tip pen, draw a line around the area to designate. The line should have a thickness of at least 1 mm, 0.04". Make sure there is no break in the line.

OK	NG = NO GOOD
	



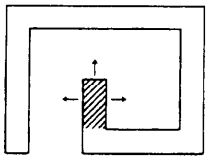
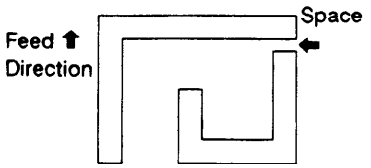
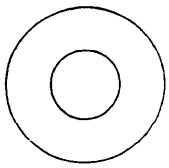
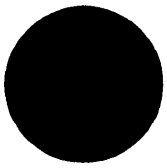
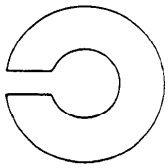
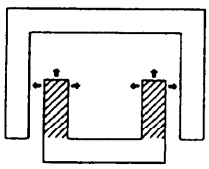
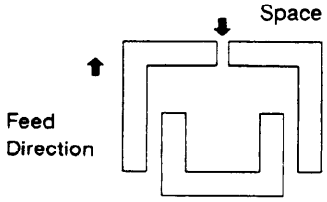
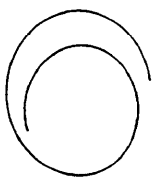
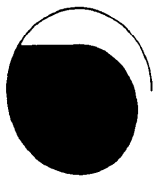
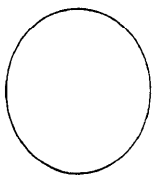
✻ Draw the line at least 2 mm, 0.08", from the image so that the complete image can be recognized.



✻ The line marking the designated area should be more than 2 mm, 0.08", from any neighboring image.

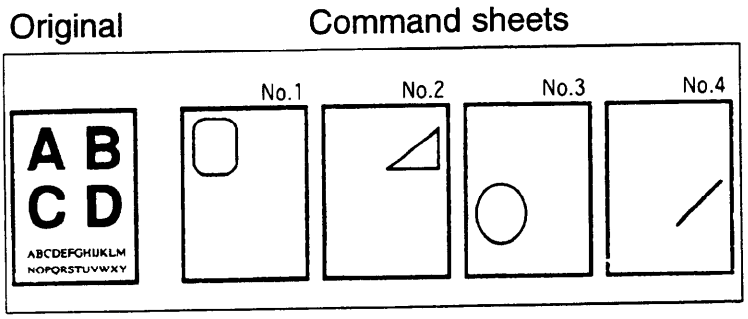
Notes about drawing a command sheet

- The image may differ depending on how the designated area is drawn, **so remember the following when making the command sheet:**

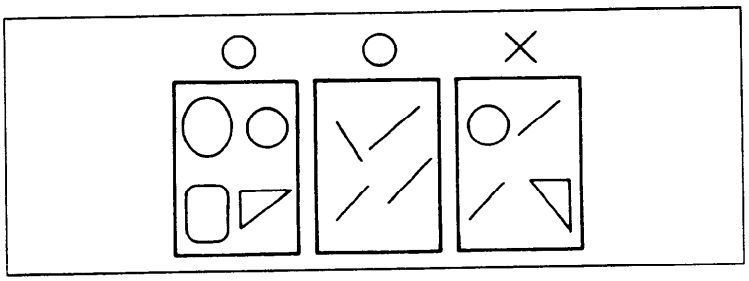
Designated area	*Area recognized*	*Preferred designated area*
Part of the designated area is surrounded by 3 sides of the entire area. 		Make a space of at least 2 mm, 0.08", in front of the area surrounded by 3 sides (**relative** to the feed direction). 
Double line pattern. 	Only the outer line is recognized. 	Make a gap of at least 2 mm, 0.08" in width. 
The designated area is surrounded by 3 sides of another designated area. 		Make a space of at least 2 mm, 0.08" in front of the area surrounded by 3 sides (**relative** to the feeding direction). 
Non-closed line 		Designate the area with a closed line. 

Features

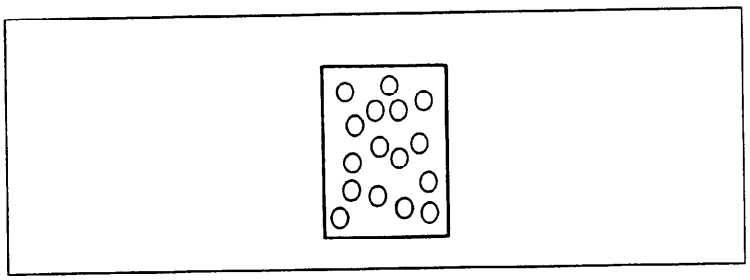
- You can combine up to 4 command sheets when making a master.



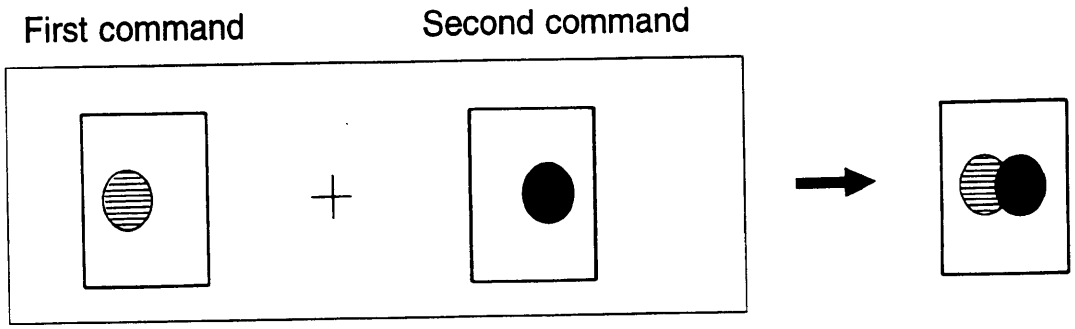
- You cannot use both the closed and diagonal line method on the same command sheet



- You can designate many areas on one sheet and there is no limit to the number of areas you can designate.



- If designated areas on two or more command sheets overlap, the last command sheet will apply for the overlapping portion.

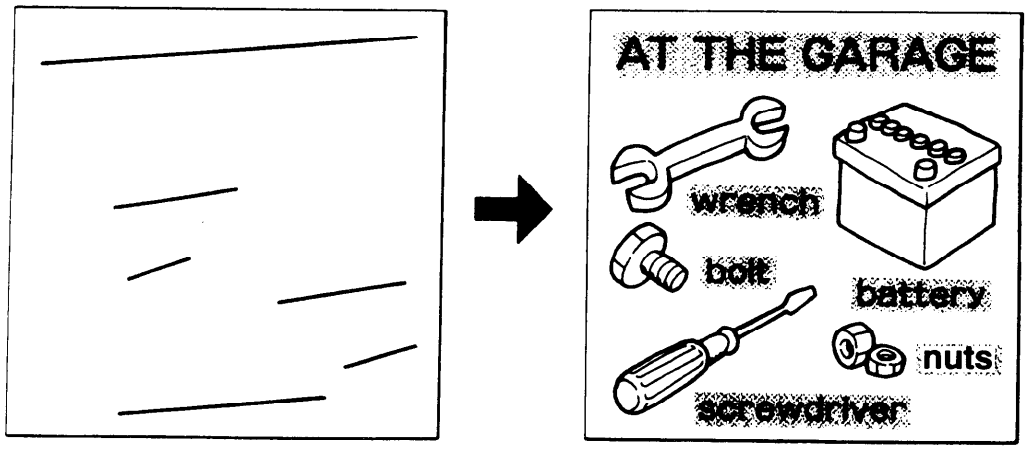


Command sheets and finished prints

The following illustrations will help you understand how to draw a command sheet.

When drawing a command sheet using a diagonal line

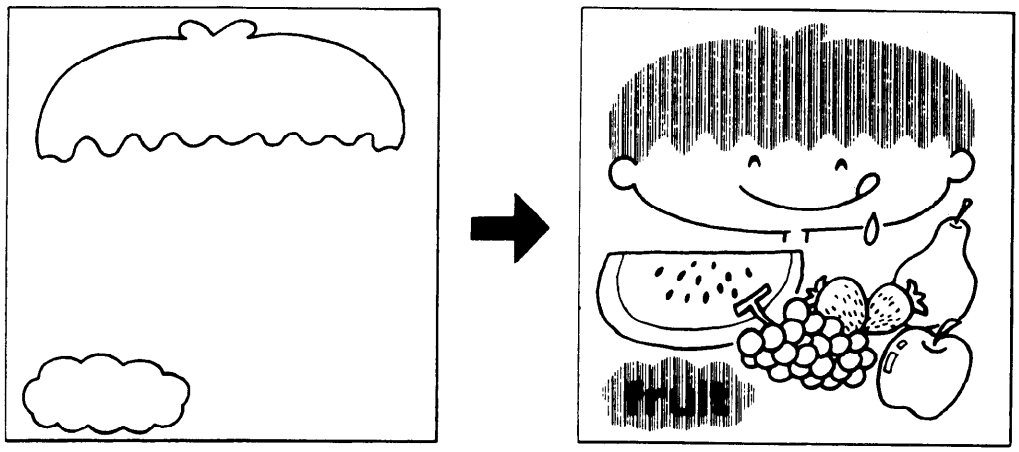
Command sheet Print



- The diagonal line method is easy to use for designating rectangular areas. It is also more precise, but it is difficult to use for designating complex areas.

When drawing a command sheet using a closed line

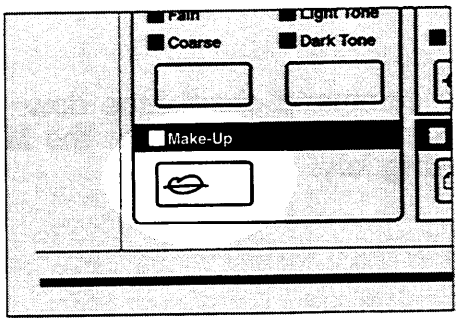
Command sheet Print



- The closed line method is easier to use for complex areas, but it is less precise. It also takes longer to draw a command sheet with the closed line method.

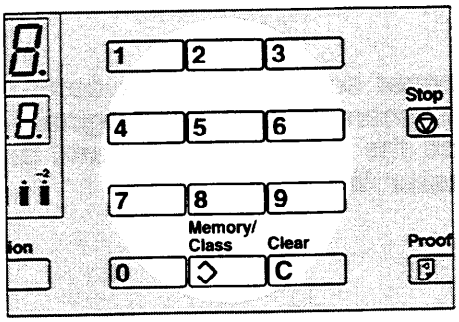
HOW TO USE IMAGE MAKE-UP MODE

Saving And Deleting Modes (One Command Sheet)



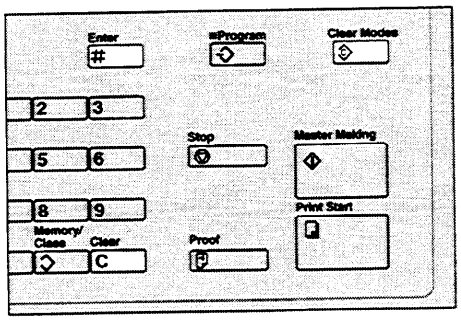
1. Press the **Make-up** key.

   If you want to leave Make-up mode at any time, press the **Make-up** key again.

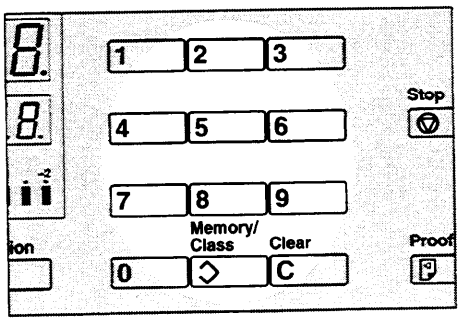


2. Using the **Number** keys, select Image Make-up mode for the designated area. (See page 5.)

   Save area ... Fn1 or Fn11
   Delete area ... Fn3 or Fn13

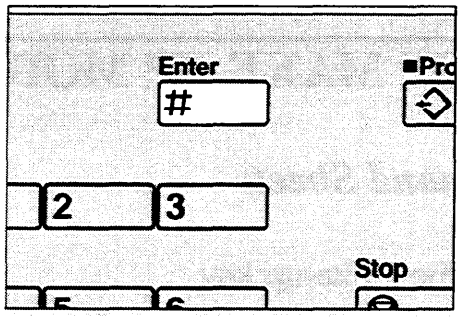


3. Press the **Enter** key.
   - If a Fn No. (command number) was entered previously and is still in memory, press the **Clear** key.
   - The commands entered previously are stored in memory until the main switch is turned off or the **Clear Modes** key is pressed.
4. Press the **Enter** key again.

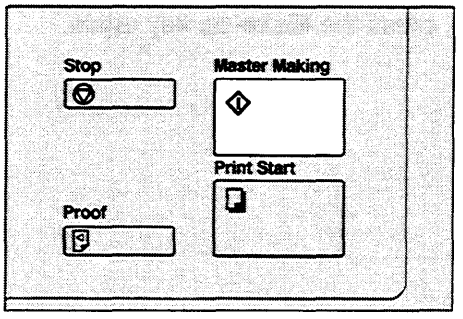


5. Using the **Number** keys, select Image Make-up mode for the outside area (see page 6).

   Save area ... Fn1
   Delete area ... Fn3



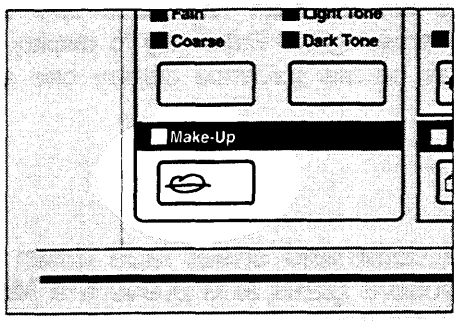
6. Press the **Enter** key.
   - To check the modes that you have entered, press the **Make-up** key twice and then keep pressing the **Enter** key to display the modes on the guidance display one at a time.



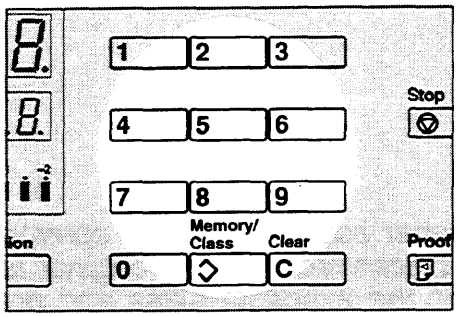
7. Set the command sheet face down on the exposure glass and press the **Master Making** key.

8. The beeper sounds after the command sheet is scanned. Set the original face down on the exposure glass and press the **Master Making** key.

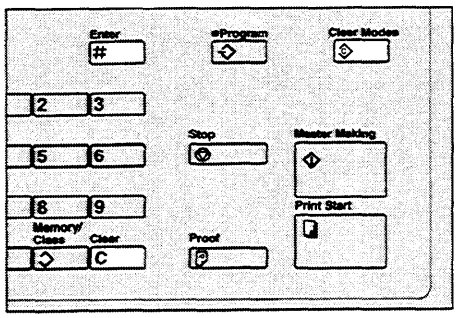
Outline Mode (One Command Sheet)



1. Press the **Make-up** key.
   - If you want to leave the Make-up mode at any time, press the **Make-up** key again.

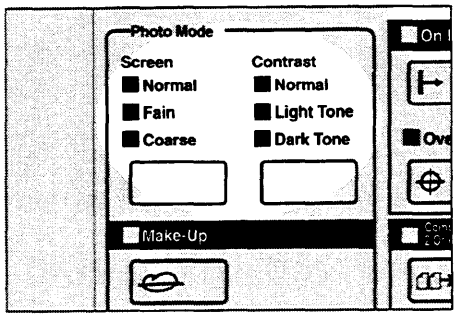


2. Using the **Number** key, select the Outline mode (Fn2) for the designated area. (See page 5.)



3. Press the **Enter** key.
   - If a Fn No. (Command number) was entered previously and is still in memory, press the **Clear** key.
   - The commands entered previously are stored in memory until the main switch is turned off or the **Clear Modes** key is pressed.

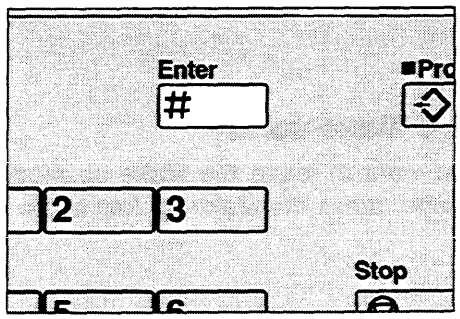
4. Press the **Enter** key again.



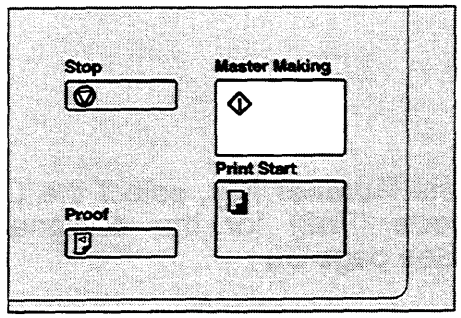
5. Using the **Number** keys, select Image Make-up mode for the outside area (see page 6).

   Fn1 ... Line mode
   Fn3 ... Delete mode
   Fn4 ... Photo mode

   If you entered Fn4, adjust the screen and contrast with the **Screen** and **Contrast** keys.



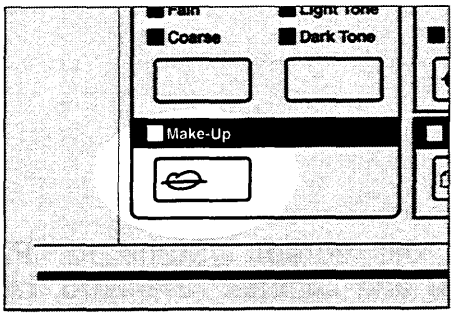
6. Press the **Enter** key.
   - To check the modes that you have entered, press the **Make-up** key twice and then keep pressing the **Enter** key to display the modes on the guidance display one at a time.



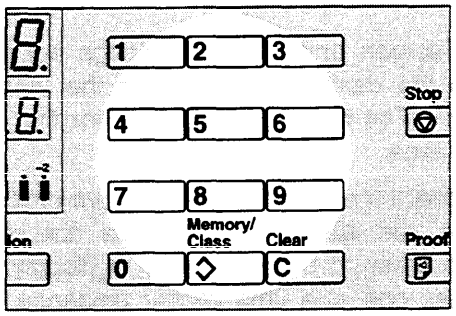
7. Set the command sheet face down on the exposure glass and press the **Master Making** key.

8. The beeper sounds after the command sheet is scanned. Set the original face down on the exposure glass and press the **Master Making** key.

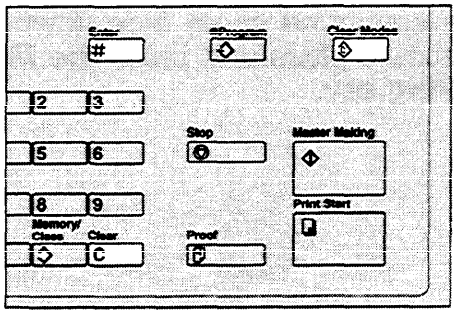
Photo Mode (One Command Sheet)



1. Press the **Make-up** key.
   - If you want to leave Make-up mode at any time press the **Make-up** key again.

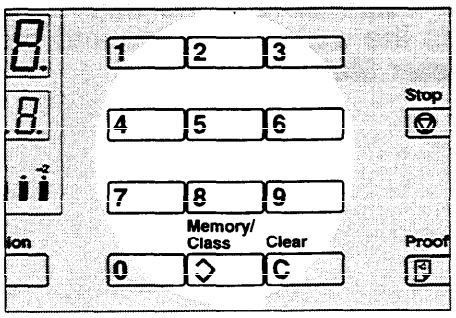


2. Using the **Number** keys, select Image Make-up mode (Fn4 or Fn14) for the designated area. (See page 5).



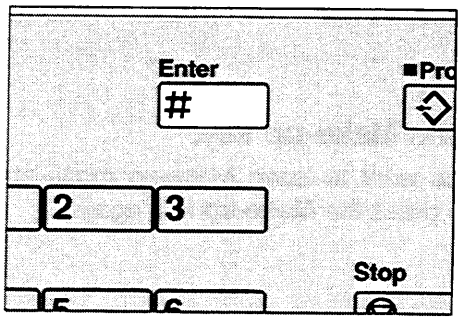
3. Press the **Enter** key.
   - If a Fn No. (command number) was entered previously and remains in memory, press the **Clear** key.
   - The commands entered previously are stored in memory until the main switch is turned off or the **Clear Modes** key is pressed.

4. Press the **Enter** key again.

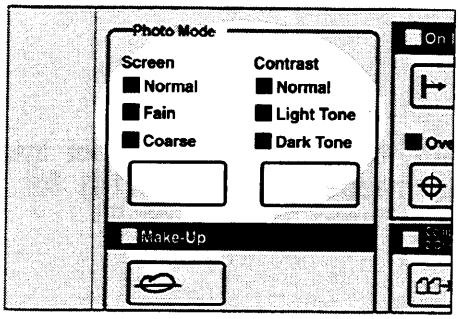


5. Using the **Number** keys, select Image Make-up mode for the outside area. (See page 6.)

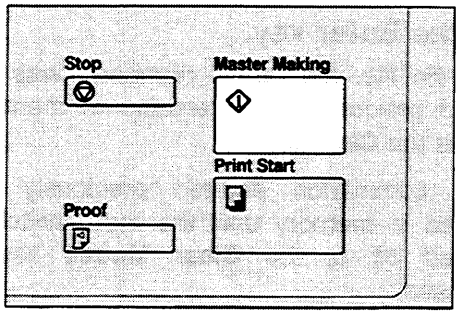
   Fn1 ... Line mode
   Fn2 ... Outline mode
   Fn3 ... Delete mode
   Fn4 ... Photo mode



6. Press the **Enter** key.



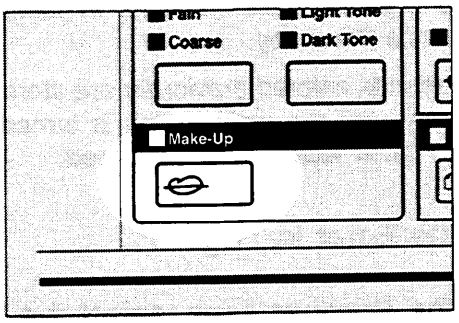
7. Adjust the screen (Standard, Fine, Coarse) and contrast (Standard, Light, Dark) with the **Screen** and **Contrast** keys.
   - The screen and contrast settings apply to both the designated area and the outside area if Fn4 has been specified for the outside area.
   - To check the modes that you have entered, press the **Make-up** key twice and then keep pressing the **Enter** key to display the modes one at a time on the guidance display.



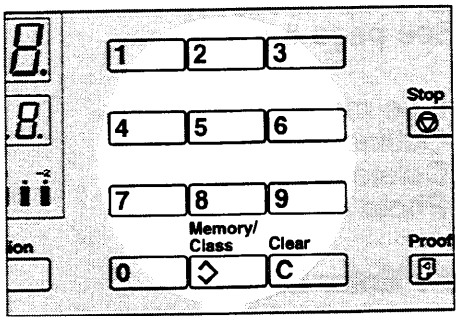
8. Set the command sheet face down on the exposure glass and press the **Master Making** key.

9. The beeper sounds after the command sheet is scanned. Set the original face down on the exposure glass and press the **Master Making** key.

Pattern Modes (One Command Sheet)

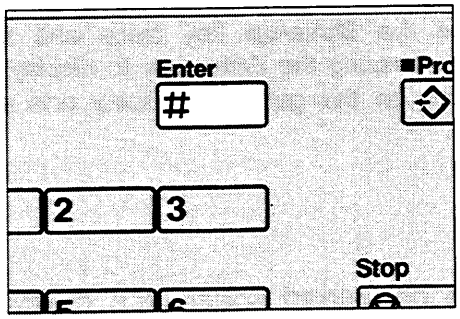


1. Press the **Make-up** key.
   - If you want to leave Make-up mode at any time, press the **Make-up** key again.

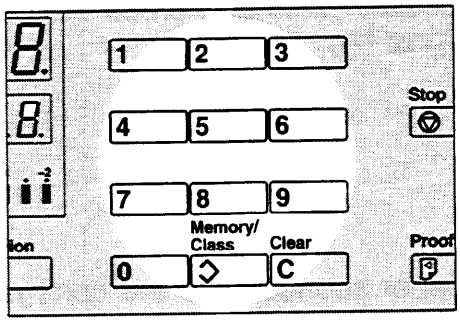


2. Using the **Number** keys, select the Make-up mode for the designated area. (See page 5.)

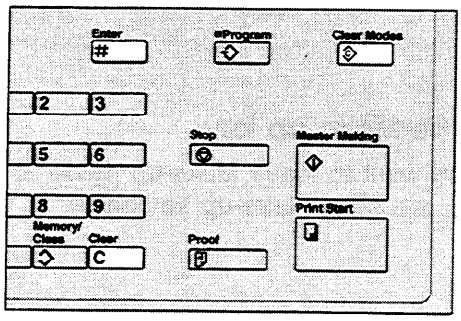
   Fn5 or Fn15 ... Image pattern mode
   Fn6 or Fn16 ... Area Pattern mode
   Fn7 or Fn17 ... Image outline and area pattern mode



3. Press the **Enter** key.

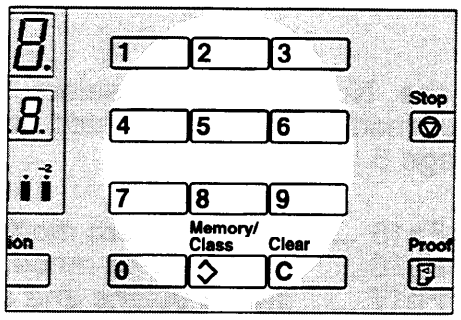


4. Using the **Number keys**, select the background pattern number (1 ~ 40, 51 ~ 90, 101 ~ 140, 151 ~ 190). (see page 7.)



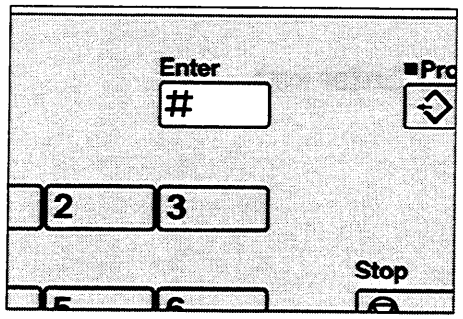
5. Press the **Enter** key.
   - If a Fn No. (command number) was entered previously and remains in memory, press the **Clear** key.
   - Commands entered previously are stored in memory until the main switch is turned off or the **Clear Modes** key is pressed.

6. Press the **Enter** key again.

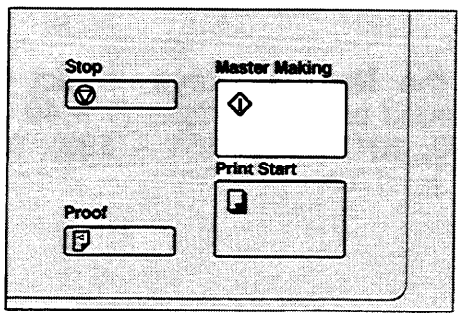


7. Using the **Number** keys, select the Image Make-up mode for the outside area. (See page 6.)

   Fn1 ... Line mode
   Fn2 ... Outline mode
   Fn3 ... Delete mode
   Fn4 ... Photo mode



8. Press the **Enter** key.
   - To check the modes that you have entered, press the **Make-up** key twice and then keep pressing the **Enter** key to display the modes on the guidance display one at a time.

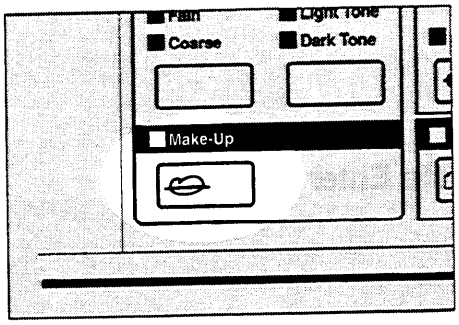


9. Set the command sheet face down on the exposure glass and press the **Master Making** key.

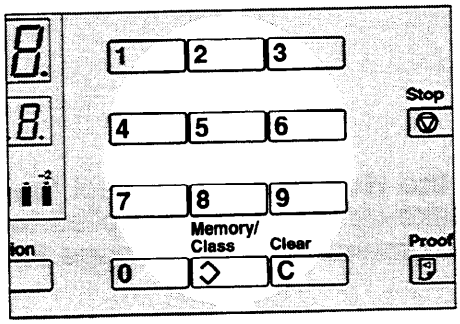
10. The beeper sounds after the command sheet is scanned. Set the original face down on the exposure glass and press the **Master Making** key.

Using More Than One Command Sheet

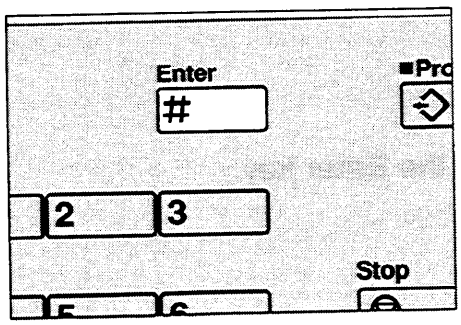
- You can combine up to four command sheets to make a master.



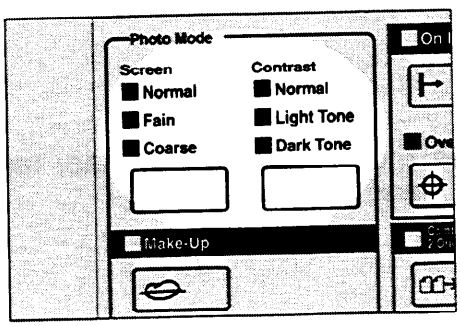
1. Press the **Make-up** key.
   - If you want to leave Make-up mode at any time, press the **Make-up** key again.



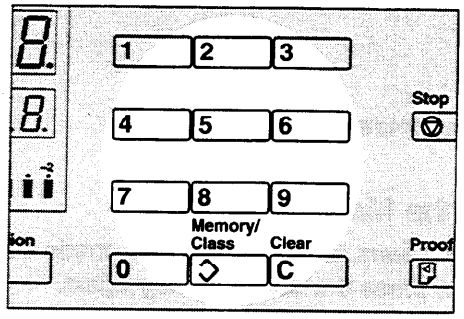
2. Using the **Number** keys, select the Image Make-up mode for the first command sheet. (See page 5.)



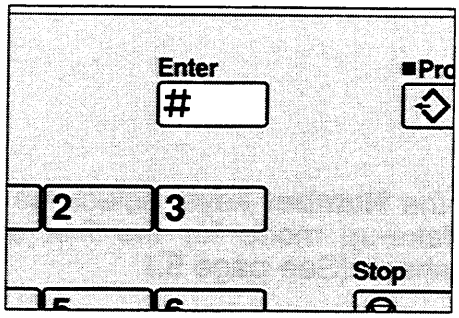
3. Press the **Enter** key.



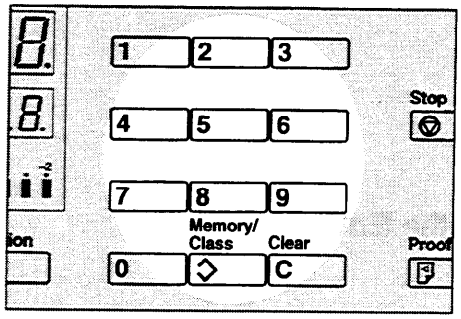
4. If you have selected fn4 or 14, adjust the screen and contrast using the **Screen** and **Contrast** keys.



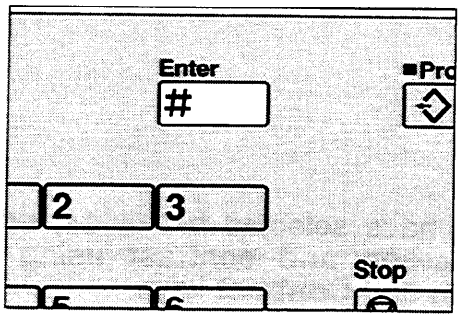
5. If you have selected Fn5, 6, 7 or Fn15, 16, 17, enter the background pattern number (1 ~ 40, 51 ~ 90, 101 ~ 140, 151 ~ 190) with the **Number** keys. (See page 7.)



6. Press the **Enter** key.

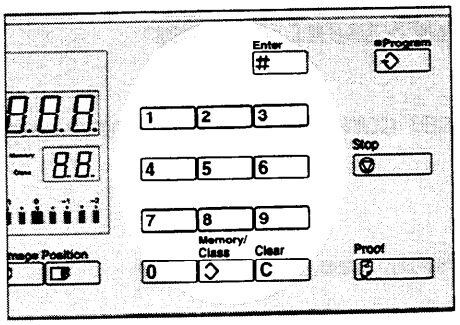


7. Using the **Number** keys, select the Image Make-up mode to be applied to the next command sheet. (See page 5.)



8. Press the **Enter** key.

9. To use more command sheets, repeat steps 7 and 8.

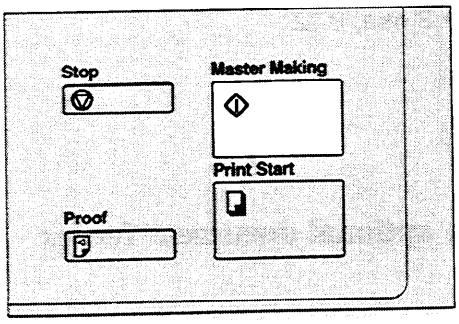


8. Press the **Enter** key.

9. Using the **Number** keys, select Image Make-up mode for the outside area. (see page 6.)

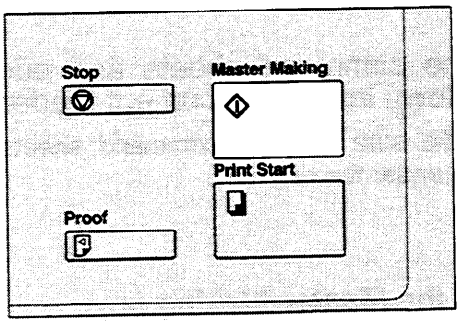
   Fn1 ... Line mode
   Fn2 ... Outline mode
   Fn3 ... Delete mode
   Fn4 ... Photo mode

10. Press the **Enter** key.
    - To check the modes that you have entered, press the **Make-up** key twice and then keep pressing the **Enter** key to display the modes on the guidance display one at a time.



11. Set the first command sheet face down on the exposure glass and press the **Master Making** key. The beeper sounds after the command sheet is scanned.

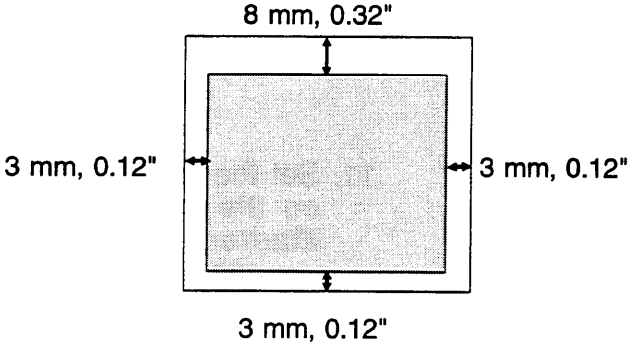
13. Repeat step 11 until all command sheets are done.



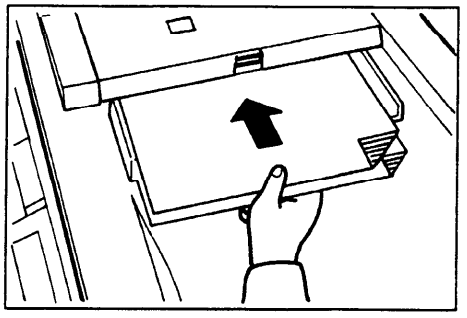
14. Set the original face down on the exposure glass and press the **Master Making** key.

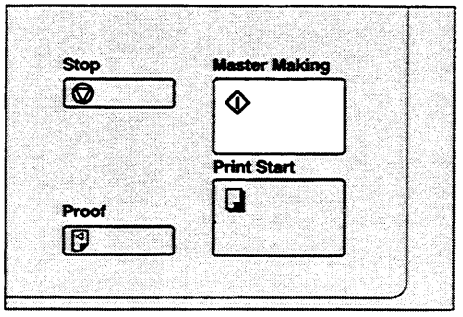
Make-up Printing With The Optional Document Feeder

- Under the following conditions, you should set command sheets and original on the exposure glass.
- **When using paste-up originals.**
- **When the command sheets and original are of different size.**
- **When you use command sheets or originals made from roll-paper.**
- When using coated paper or transparent paper as a command sheet, set the command sheet and original separately into the document feeder.
- **With the optional document feeder, you can designate areas to be edited in Make-up mode inside the limits given below:**



How to make prints in Make-up mode with the optional document feeder



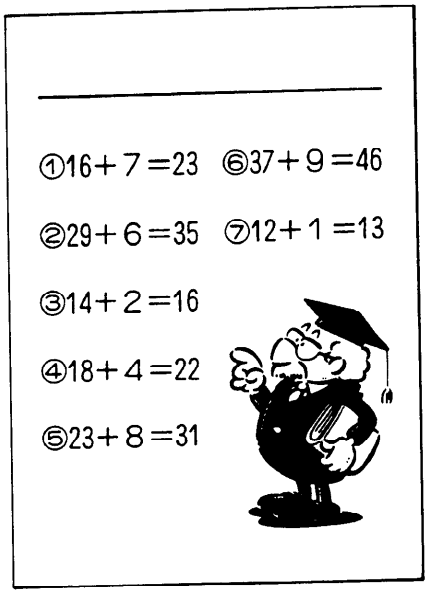


1. Press the **Make-up** key.
2. Set the desired Fn No. and press the **Enter** key.
3. Set the command sheets and original face down into the document feeder.
   - Make sure that the command sheets are set under the original.
4. Press the **Master Making** key.
   - If a command sheet or an original misfeeds, remove the misfed command sheet or original and reset it into the document feeder. It is not necessary to reset the previous command sheets or original.

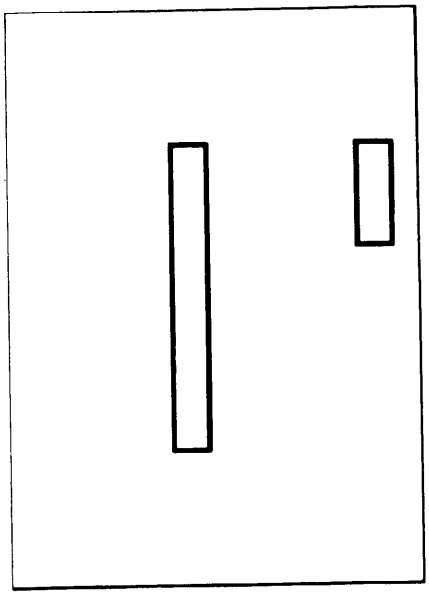
MAKE-UP SAMPLES

1. Command Sheet No. 1, Designated area: Fn3
2. Outside area: Fn1
3. Print

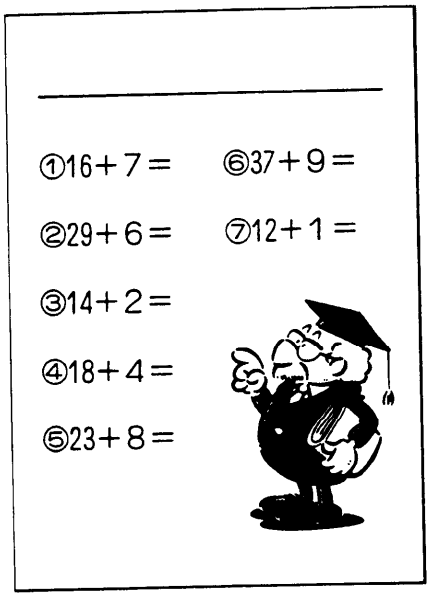
Original



Command sheet No. 1

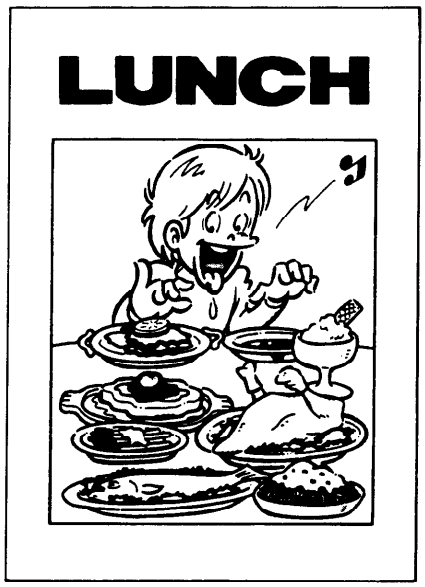


Print

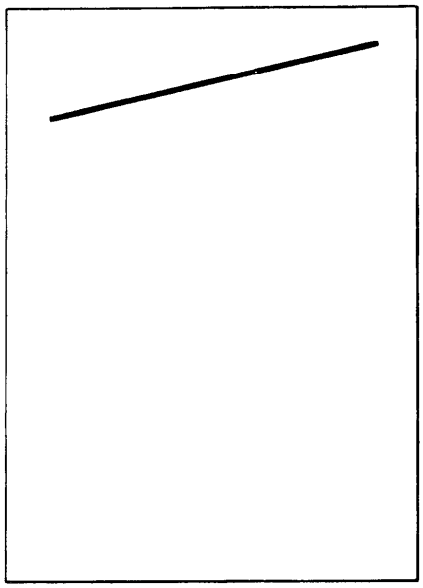


1. Command Sheet No. 1 Designated area: Fn17 Pattern No. 80
2. Command Sheet No. 2 Designated area: Fn 6 Pattern No. 67
3. Outside area: Fn1
4. Print

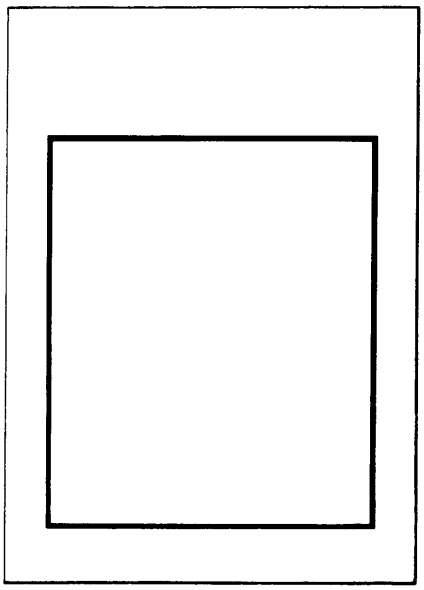
Original



Command Sheet No. 1



Command Sheet No.2



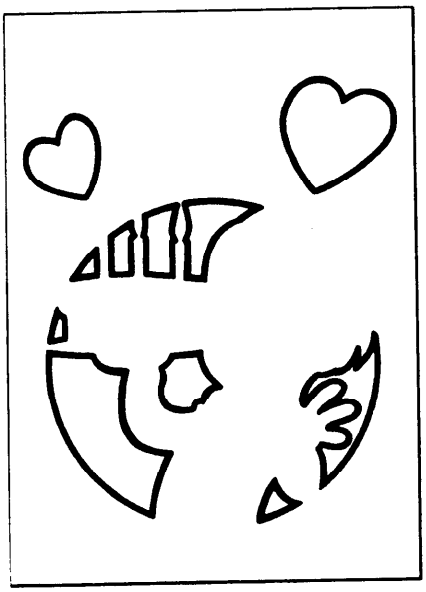
Print

1. Print the original as it is
2. Change the drum unit for color printing
3. Command Sheet No. 1 Designated area: Fn6 Pattern No.89
4. Outside area: Fn3
5. Print

Original

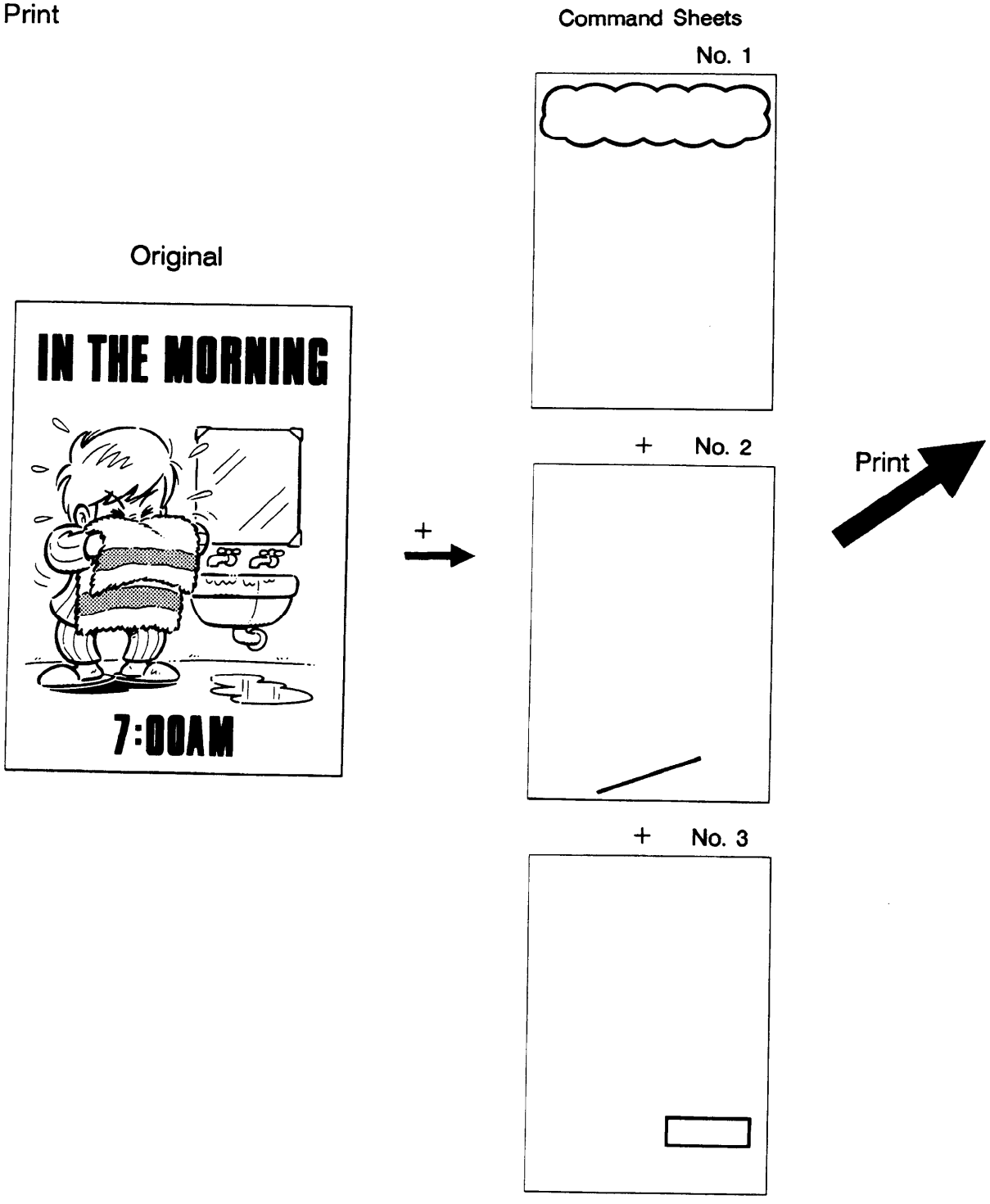
+

Command Sheet No. 1

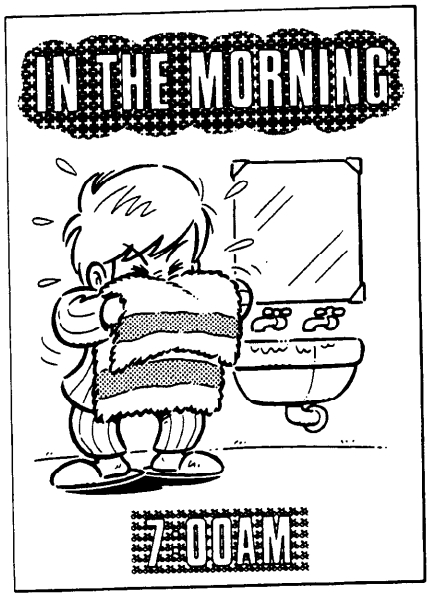


Print

1. Command Sheet No. 1 Designated area: Fn7 Pattern No. 75
2. Command Sheet No. 2 Designated area: Fn17 Pattern No. 85
3. Command Sheet No. 3 Designated area: Fn3
4. Outside area: Fn1
5. Print
6. Change the drum unit for color printing
7. Command sheet No. 1 Designated area: Fn7 Pattern No. 61
8. Outside area: Fn3
9. Print

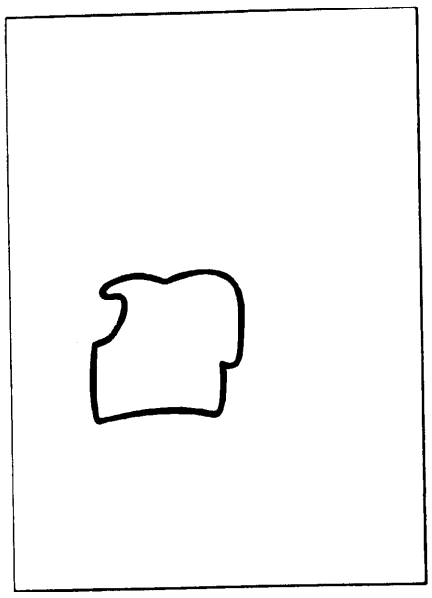


Print



+

Command Sheet No.1



Print